Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Amendment of the Commission's Rules with	)	GN Docket No. 13-185
Regard to Commercial Operations in the	)	
1695-1710 MHz, 1755-1780 MHz, and	)	
2155-2180 MHz Bands	)	

COMMENTS OF UNITED STATES CELLULAR CORPORATION

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EXECUTIVE SUMMARY

Given the substantial public interest benefits related to ubiquitous and affordable broadband access, as well as our nation's ever-increasing spectrum crunch, United States Cellular Corporation ("USCC") urges the Commission to seize this opportunity to free up as much additional spectrum as possible. The proposed AWS-3 bands, by being adjacent to the AWS-1 spectrum, likely can be put to use more cost-effectively than most newly-auctioned spectrum. Licensees could build upon existing infrastructure and incorporate AWS-3 spectrum into their current operations, and existing AWS-1 equipment could serve as a foundation for AWS-3 equipment. In addition to maximizing the amount of reallocated spectrum, the Commission should continue to work with incumbent Federal users and the industry in order to clear as much AWS-3 spectrum as possible for exclusive commercial use.

The Commission also should strive to maximize the amount of paired AWS-3 spectrum. This would benefit all carriers because paired blocks are consistent with the leading wireless broadband technologies, and thus allow prompt network deployments. Maximizing the amount of paired spectrum also would promote competition because carriers require adequate paired spectrum to expand into new markets. Beyond maximizing the amount of paired spectrum, USCC emphasizes that the AWS-3 service rules and auction procedures must provide adequate opportunities for small and regional carriers. Without the participation of these carriers, there will be a continued lack of competition in the wireless industry and reduced network deployments in rural and other underserved areas. In particular, USCC believes structuring the AWS-3 rules in the following ways will be critical for ensuring that small and regional carriers have a reasonable opportunity to acquire AWS-3 licenses and to subsequently put this spectrum to its highest and best use.

First and foremost, USCC strongly urges the Commission to adopt a clear, *ex ante* interoperability requirement. Specifically, assuming the Commission adopts the AWS-3 spectrum pairings broadly supported by the industry, it should require that: (1) all AWS-3 mobile devices be capable of transmitting across the entire 2095-2180 MHz uplink band and receiving across the entire 1695-1780 MHz downlink band; and (2) all AWS-3 networks permit the use of such mobile devices. By doing so, the Commission would ensure the development of an expansive ecosystem of devices capable of operating across both the AWS-1 and AWS-3 bands, which would expand roaming opportunities, enhance economies of scale, spur network deployments in rural and other underserved areas, and promote competition, which would lead to greater investment and innovation and lower consumer costs.

On the other hand, absent a regulatory requirement, the largest carriers, who alone can drive device development, would have the ability, as well as the incentive, to create custom-made or "boutique" band classes capable of operating only on their licensed frequencies. Adopting an interoperability rule at this stage also is necessary so that potential bidders that are not large enough to drive device development will know in advance that the AWS-3 bands will conform to the Commission's traditional model of full interoperability. In other words, if the Commission declines to adopt an *ex ante* interoperability requirement, this failure would deter auction participation by all but the largest carriers, further reducing competition to the detriment of all consumers, but especially with respect to those living in rural and other underserved areas.

Licensing the AWS-3 spectrum on the basis of Cellular Market Areas ("CMAs") also is critical in order to promote competition and ensure the deployment of rural networks. Larger license areas would fail to preserve opportunities for small and regional carriers, as well as new entrants, to provide an important source of competition, variety, and diversity in rural and less densely populated areas. At the same time, all carriers would benefit because CMAs would

allow more targeted spectrum acquisitions, while not discriminating in favor of a particular business plan. In contrast, larger license areas would significantly disadvantage small and regional carriers, as well as consumers in small and rural markets, to the benefit of the already dominant national carriers. Although CMAs would permit large carriers seeking expansive geographic service areas to aggregate licenses in order to achieve economies of scale, larger license areas would prevent most small and regional carriers from ever gaining access to AWS-3 spectrum because divestitures by large carriers in the secondary market have been, and likely will continue to be, the exception rather than the rule.

Prohibiting the use of package bidding is another action necessary to ensure competition. Package bidding can effectively foreclose participation by smaller bidders because it skews an auction in favor of the largest bidders, who can end up acquiring licenses at a discount. Package bidding also creates substantial exposure risks for smaller bidders because of its potential to reactivate dormant bids, and it adds yet another layer of complexity to an auction. Ultimately, those living in rural areas would be harmed because package bidding would make it far less likely that AWS-3 licenses will be awarded to small and regional carriers, who often focus on rural and other underserved areas. At the same time, package bidding is unnecessary because adequate, and perhaps even more efficient, spectrum aggregation opportunities are available under the Commission's standard auction procedures. Accordingly, there is no reason to subject smaller bidders to the bias and strategic burdens caused by package bidding.

USCC also supports an auction-specific spectrum aggregation limit. Specifically, the Commission should prohibit an applicant from acquiring more than 25 percent of the AWS-3 spectrum made available in a single market. Absent such a limit, the Commission would risk another Auction 73, which was dominated by AT&T and Verizon and which significantly delayed device access by Lower 700 MHz A Block licensees, preventing these primarily small

and regional carriers from timely building out their networks and serving the public. This limit should apply during the AWS-3 auction in order to prevent large bidders from monopolizing the auction, and thereby excluding smaller bidders from acquiring AWS-3 licenses at auction. Allowing licensees to comply with this limit through post-auction divestitures would permit them to choose which competitors to sell their licenses to, which could further harm competition.

In addition, as it has done in the past, the Commission should recognize that spectrum occupied by incumbent services requires a longer initial license term. Specifically, USCC proposes an initial license term of 15 years, which the Commission found necessary to address a similar situation faced by AWS-1 licensees. Otherwise, the potentially significant time that will be required to either relocate incumbent users in the AWS-3 bands or to coordinate with remaining Federal users would cause AWS-3 licensees to have initial license terms far shorter than the 10-year term generally afforded to CMRS licensees. On the other hand, because a 15-year license term would provide sufficient time to compensate for the highly-encumbered nature of the AWS-3 bands, both incumbents and new entrants would be more inclined to participate in the auction, and would have a far better opportunity to build out expansive networks.

Based on these same considerations, USCC strongly urges the Commission to follow its AWS-1 precedent and award renewal expectancies to AWS-3 licensees. Absent a renewal expectancy, it is very difficult for a bidder to justify expending the substantial sums needed to acquire licenses and deploy networks. Access to outside financing also becomes far more difficult if a carrier does not have a reasonable expectation that its license will be renewed. In addition, USCC strongly opposes the Commission's proposal to subject AWS-3 licensees to additional renewal standards because these would generate enormous and unnecessary new paperwork burdens and create investment-killing uncertainty concerning the security of licenses.

Finally, in order to provide sufficient flexibility in how licensees deploy their networks, the Commission should gauge AWS-3 licensees' build-out efforts using its "substantial service" standard, which the Commission appropriately applied to the similarly-encumbered AWS-1 spectrum. Inflexible build-out requirements are unnecessary, arbitrary, and ignore market realities. They also weigh most heavily on new entrants and small and regional carriers, who often lack existing infrastructure that can serve as a foundation for meeting these requirements, and who typically lack the economies of scope and scale of carriers serving large urban populations. If the Commission nevertheless prescribes uniform construction obligations, it should avoid adopting an interim benchmark, an approach it has favored in the past, including with respect to AWS-1 licensees, and any end-of-term benchmark must take into account the highly-encumbered nature of the AWS-3 bands. The Commission also must avoid imposing draconian penalties, such as automatic license termination. Instead, USCC supports a "keep-what-you-use" penalty for a licensee's failure to meet any final build-out requirement. This approach would sufficiently incentivize prompt network deployments and make additional spectrum available in rural areas, but would not strand good faith investments and risk leaving consumers without services they have been relying on for years.

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Amendment of the Commission's Rules with Regard to Commercial Operations in the 1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz Bands	)	GN Docket No. 13-185

COMMENTS OF UNITED STATES CELLULAR CORPORATION

United States Cellular Corporation ("USCC") submits these comments in response to the Notice of Proposed Rulemaking ("NPRM") released July 23, 2013 in the above-captioned proceeding.[1] In the NPRM, the Commission proposes rules for spectrum in the 1695-1710 MHz, 1755-1780 MHz, 2020-2025 MHz, and 2155-2180 MHz bands (collectively, the "AWS-3 bands"). Maximizing the amount and usability of the spectrum made available in this proceeding is critical in order to help address our nation's current spectrum crunch and to ensure that every American, including those living in rural areas, has an opportunity to benefit from the vast opportunities made possible by broadband access.[2] Making sufficient additional spectrum available also has the potential to help address the current lack of vibrant competition in the wireless industry.

These substantial public interest benefits will only arise, however, if small and regional carriers have a reasonable opportunity to acquire AWS-3 licenses and to subsequently put this

[1] *See Amendment of the Commission's Rules with Regard to Commercial Operations in the 1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz Bands*, Notice of Proposed Rulemaking and Order on Reconsideration, 28 FCC Rcd 11479 (2013).

[2] *See id.* at 11576 (Statement of Acting Chairwoman Clyburn) ("This proceeding has the potential to repurpose a significant amount of spectrum for flexible commercial use, benefiting consumers and businesses across the nation."); *id.* at 11577 (Statement of Commissioner Rosenworcel) ("[M]aking more spectrum available can help grow the broader economy. After all, our wireless economy already generates nearly $200 billion annually and supports directly or indirectly 3.8 million jobs.").

spectrum to its highest and best use. USCC's proposals therefore focus on ensuring that the AWS-3 service rules and auction procedures provide small and regional carriers a level playing field. USCC believes that its proposals would best allow the Commission to advance its policies and comply with its statutory obligations.[3]

I. THE PUBLIC INTEREST WOULD BE GREATLY SERVED BY MAXIMIZING THE AMOUNT OF AWS-3 SPECTRUM

USCC fully supports the Commission's finding that the "many benefits to the public demonstrate the necessity of ensuring that robust and affordable broadband is available to all Americans."[4] For instance, as noted by the Obama Administration, "[f]ew technological developments hold as much potential to enhance America's economic competitiveness, create jobs, and improve the quality of our lives as wireless high-speed access to the Internet."[5] An unacceptable number of Americans, however, will continue to be deprived of the vast opportunities made possible by broadband access absent robust network deployments,[6] which can only occur if sufficient spectrum is made available to the wireless industry.[7]

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[3] *See Promoting Interoperability in the 700 MHz Commercial Spectrum*, Notice of Proposed Rulemaking, 27 FCC Rcd 3521, 3521 (2012) ("*Interoperability NPRM*") ("The Communications Act directs the Commission to … protect and promote vibrant competition in the marketplace."); *Facilitating the Provision of Spectrum-Based Services to Rural Areas and Promoting Opportunities for Rural Telephone Companies to Provide Spectrum-Based Services*, Report and Order and Further Notice of Proposed Rulemaking, 19 FCC Rcd 19078, 19081 (2004) ("*Facilitating Rural Services R&O*") ("One of the Commission's primary statutory obligations, as well as one of its principal public policy objectives, is to facilitate the widespread deployment of facilities-based communications services to all Americans, including those doing business in, residing in, or visiting rural areas.").

[4] FCC, *Bringing Broadband to Rural America: Report on a Rural Broadband Strategy*, GN Docket No. 09-29 (May 22, 2009), *attached to Rural Broadband Report Published in FCC Record*, Public Notice, 24 FCC Rcd 12791, 12805 (2009) ("*Rural Broadband Report*"); *see Connect America Fund*, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd 17663, 17684 (2011) ("The principle that all Americans should have access to communications services has been at the core of the Commission's mandate since its founding.").

[5] Memorandum for the Heads of Executive Departments and Agencies, *Unleashing the Wireless Broadband Revolution*, 75 Fed. Reg. 38387, 38387 (2010) ("*2010 Presidential Memo*"); *see* NPRM, 28 FCC Rcd at 11482 ("Wireless broadband represents a critical component of economic growth, job creation, and global competitiveness because consumers are increasingly using wireless broadband services to assist them in their everyday lives.").

[6] *See* FCC, *Connecting America: The National Broadband Plan*, p. 129 (rel. Mar. 16, 2010) ("*National Broadband Plan*") ("[P]eople will not experience the promised benefits of broadband – increased earning potential, enhanced connections with friends and family, improved health and a superior education – without a connection.").

[7] *See Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, Sixteenth Report, 28 FCC Rcd 3700, 3769 (2013) ("*Sixteenth Competition Report*")

The Commission therefore must continue to pursue every opportunity, including here, to promptly free up as much additional spectrum for wireless broadband services as possible.[8] Otherwise, "the result could be higher prices, poor service quality, an inability for the U.S. to compete effectively on an international basis, depressed demand and, ultimately, a drag on innovation."[9] This need to maximize the amount of available spectrum is particularly important given that the "[d]emand for wireless broadband services and the network capacity associated with those services is surging…"[10] And, because the current spectrum crunch will only worsen as demand for broadband services continues to increase exponentially, it is crucial that carriers have access to additional spectrum as quickly as possible.[11]

Fortunately, as the Commission noted, this proceeding has the potential to "help ensure that the speed, capacity, and ubiquity of the nation's wireless networks keeps pace with the skyrocketing demand for mobile service."[12] This is particularly so because the proposed AWS-3 spectrum likely can be put to use more cost-effectively than most newly-auctioned spectrum

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("[M]aking sufficient spectrum available to meet growing spectrum needs is integral to enabling network expansion and technology upgrades by providers."); *2010 Presidential Memo*, 75 Fed. Reg. at 38387 ("This new era in global technology leadership will only happen if there is adequate spectrum available to support the forthcoming myriad of wireless devices, networks, and applications that can drive the new economy.").

[8] *See* Memorandum for the Heads of Executive Departments and Agencies, *Expanding America's Leadership in Wireless Innovation*, 78 Fed. Reg. 37431, 37431 (2013) ("We must continue to make additional spectrum available as promptly as possible for the benefit of consumers and businesses.").

[9] *Service Rules for Advanced Wireless Services in the 2000-2020 MHz and 2180-2200 MHz Bands*, Report and Order and Order of Proposed Modification, 27 FCC Rcd 16102, 16169-70 (2012) ("*AWS-4 R&O*").

[10] NPRM, 28 FCC Rcd at 11482; *see Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, Fifteenth Report, 26 FCC Rcd 9664, 9682 (2011) ("*Fifteenth Competition Report*") ("As mobile wireless data usage grows, spectrum becomes an increasingly important input for mobile broadband networks…").

[11] *See* NPRM, 28 FCC Rcd at 11577 (Statement of Commissioner Rosenworcel) ("The services that are dependent on wireless airwaves are multiplying fast. Consider that mobile data traffic is projected to increase by 13 times in the next five years."); *id.* at 11579 (Statement of Commissioner Pai Approving in Part and Concurring in Part) ("When it comes to spectrum, supply is short, and demand is long.").

[12] *Id.* at 11481-82; *see id.* at 11577 (Statement of Commissioner Rosenworcel) ("This proceeding is important. We are teeing up for auction spectrum bands that have the potential to change our wireless landscape…").

because of its adjacency to the AWS-1 bands.[13] For instance, current AWS-1 licensees could build upon their existing infrastructure and incorporate AWS-3 spectrum into their current operations, which would improve network capacity and enable them to quickly and efficiently offer new and expanded services, including in rural areas. In addition, existing AWS-1 equipment could serve as a foundation for AWS-3 equipment, which would result in cost savings for the industry and consumers.

USCC therefore urges the Commission to seize this opportunity by maximizing the amount of spectrum allocated for AWS-3 services and fully leveraging the potential of AWS-1 proximity. For instance, the Commission should not use the 1755-1780 MHz band in order to satisfy its statutory obligation to identify an additional 15 megahertz of spectrum.[14] Rather, the Commission should pair this spectrum with another 25 megahertz band – specifically, the 2155-2180 MHz band, which the Spectrum Act requires to be auctioned and licensed by February 2015[15] – and identify a different 15 megahertz of spectrum (*e.g.*, the 2095-2110 MHz) to pair with the 1695-1710 MHz band identified by the NTIA pursuant to the Spectrum Act. Not only would this approach permit more paired spectrum, while creating symmetrical AWS-3 pairings on either side of the compatible AWS-1 bands, it would make an additional 15 megahertz of spectrum available for wireless broadband services.

Moreover, in order to ensure that licensees are able to put AWS-3 spectrum to its highest and best use, USCC strongly supports the Commission's goal "to clear and allocate spectrum in these bands for exclusive commercial use to the maximum extent feasible."[16] As Commissioner Pai noted, the "fewer impairments, exclusion zones, and complicated sharing arrangements there

[13] *See id.* at 11579 (Statement of Commissioner Pai Approving in Part and Concurring in Part) ("[I]ts adjacency to the existing AWS-1 band allows for more efficient spectrum usage."); *AWS-4 Order*, 27 FCC Rcd at 16135 ("[E]xtensions of existing bands can typically be put to use more cost-effectively than new bands.").

[14] *See* NPRM, 28 FCC Rcd at 11497.

[15] *See* Spectrum Act §6401(b).

[16] NPRM, 28 FCC Rcd at 11482.

are, the more valuable the spectrum will be, especially for regional carriers that are unlikely to have the wherewithal to coordinate their use with potentially hundreds of federal users."[17]

The availability of large amounts of additional spectrum also is crucial for promoting competition because robust competition requires strong competitors with access to adequate spectrum resources.[18] The potential for the AWS-3 spectrum to promote competition from new entrants, as well as small and regional carriers expanding their service areas and network capacities, is particularly important given the current lack of vibrant competition in the wireless industry.[19] If the Commission fails to take measures to address this current competitive imbalance, including by maximizing the amount of available spectrum, investment and innovation will greatly decrease.[20] The ongoing lack of adequate competition also would "raise concerns that firms may be able to exercise market power, *i.e.*, without competitors or potential entry, there may not be sufficient constraints to prevent the exercise of market power."[21] In contrast, the Commission recently noted that the "benefits of competition include likely lower prices for such services, which will result in direct consumer surplus as well as greater utilization of broadband data services."[22] Increasing competition in the wireless industry therefore is crucial to spur greater broadband adoption given that, "[w]hen prompted for the main reason

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[17] *Id.* at 11580 (Statement of Commissioner Pai Approving in Part and Concurring in Part).

[18] *See Fifteenth Competition Report*, 26 FCC Rcd at 9682 ("As mobile wireless data usage grows, spectrum becomes an increasingly important input for mobile broadband networks, affecting the ability of service providers to compete in the delivery mobile broadband service.").

[19] *See Sixteenth Competition Report*, 28 FCC Rcd at 3755-57 (finding that market concentration in the wireless industry had once again increased, and noting that, from 2003 to year-end 2011, the average Herfindahl-Hirschman Index ("HHI") for the wireless market increased from 2151 to 2873 – *i.e.*, a 33.6% increase in concentration – and that a market with an HHI greater than 2500 is classified as "highly concentrated").

[20] *See id.* at 3769 ("Ensuring that sufficient spectrum is available for incumbent licensees, as well as for potential entrants, is critical to promoting competition, investment, and innovation."); *Joint Statement on Broadband*, 25 FCC Rcd 3420, 3420 (2010) ("Continuous private sector investment in wired and wireless networks and technologies, and competition among providers, are critical to ensure vitality and innovation in the broadband ecosystem and to encourage new products and services that benefit American consumers and businesses of every size.").

[21] *Fifteenth Competition Report*, 26 FCC Rcd at 9690.

[22] *Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers and Other Providers of Mobile Data Service*, Second Report and Order, 26 FCC Rcd 5411, 5428 (2011) ("*Data Roaming Order*")

they do not have broadband, 36% of non-adopters cite cost."[23] Accordingly, for this reason as well, the Commission should maximize the amount of AWS-3 spectrum made available to the wireless industry.[24]

Moreover, because maximizing the amount of reallocated spectrum would increase the chances that small and regional carriers acquire AWS-3 licenses, the Commission would better promote broadband service to rural areas, where these carriers often focus their network deployments. This benefit of maximizing the amount of AWS-3 spectrum is critical given that "broadband service in rural America is generally inadequate."[25] And, because the "cost of this digital exclusion is large and growing,"[26] immediate action is needed to address this broadband availability gap. For instance, in its *Rural Broadband Report*, the Commission recognized that broadband access "can be an important part of addressing many of the problems rural America faces," including by helping "to restore economic growth and opportunity for Americans residing and working in those areas."[27]

Notably, wireless networks are the best, and perhaps only, way to address the lack of broadband access in many rural areas because "transmission by cable or wire may be

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[23] *National Broadband Plan* at 168.

[24] *See Policies Regarding Mobile Spectrum Holdings*, Notice of Proposed Rulemaking, 27 FCC Rcd 11710, 11716 (2012) ("Facilitating access by all providers to valuable spectrum resources they need to serve their customers is essential given the current mobile wireless landscape.").

[25] *Rural Broadband Report*, 24 FCC Rcd at 12806; *see* FCC, *Bringing Broadband to Rural America: Update to Report on a Rural Broadband Strategy*, GN Docket No. 11-16 (June 17, 2011), *attached to Chairman Genachowski Releases Update to 2009 Rural Broadband Report*, Public Notice, 26 FCC Rcd 8680, 8688 (2011) ("*Update to Rural Broadband Report*") ("72.5 percent of the 26.2 million Americans that still lack access to 3 Mbps/768 kbps or faster fixed broadband services are in rural areas, even though only 21.7 percent of all Americans reside in rural areas."); *id.* at 8712 (Statement of Chairman Genachowski) ("Too many Americans, particularly in rural areas, are still being left out of our broadband economy.").

[26] *National Broadband Plan* at 129; *see Update to Rural Broadband Report*, 26 FCC Rcd at 8712 (Statement of Chairman Genachowski) ("[B]roadband is no longer a luxury, it is an increasingly vital necessity for full participation in our society and economy.")

[27] *Rural Broadband Report*, 24 FCC Rcd at 12798-99; *see id.* at 12802 ("One study estimates that communities having access to mass-market broadband grew disproportionately in employment, the number of information technology-oriented businesses, and the number of businesses overall.").

prohibitively expensive."[28] In other words, "wireless service plays a critical role in extending the reach of broadband to rural areas…"[29] But small and regional carriers cannot serve these areas without access to sufficient additional spectrum. Finally, USCC notes that maximizing the amount of AWS-3 spectrum will lead to higher auction revenues, and thereby increase funding for FirstNet, the planned nationwide public safety broadband network.[30]

II. PAIRING THE 1755-1780 MHz BAND WITH THE 2155-2180 MHz BAND AND THE 1695-1710 MHz BAND WITH THE 2095-2110 MHz BAND WOULD BEST SERVE THE PUBLIC INTEREST

USCC supports the Commission's proposal to apply AWS-3 service rules to the 1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz bands.[31] As detailed below, all of these spectrum bands possess characteristics desirable for mobile broadband services. USCC also supports CTIA's proposal that the Commission identify the 2095-2110 MHz band as the additional 15 megahertz for reallocation required by the Spectrum Act.[32] Not only does the 2095-2110 MHz band also have characteristics desirable for mobile broadband, but its designation as additional AWS-3 spectrum is critical with respect to maximizing the amount of paired AWS-3 spectrum, the substantial benefits of which are detailed below. Reallocating this additional band also would increase the total amount of spectrum made available for wireless broadband services, the public interest benefits of which USCC described above.

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[28] *Service Rules for the 698-746, 747-762 and 777-792 MHz Bands*, Second Report and Order, 22 FCC Rcd 15289, 15384 (2007) ("*700 MHz Second R&O*").

[29] *Update to Rural Broadband Report*, 26 FCC Rcd at 8697.

[30] *See* NPRM, 28 FCC Rcd at 11577 (Statement of Commissioner Rosenworcel) ("[I]f we get this right, we also will substantially fund a nationwide, interoperable, wireless broadband network for public safety… This is important, because it means we can finally deliver on the promise of the 9/11 Commission recommendations.").

[31] *See id.* at 11494-96.

[32] *See id.* at 11498.

A. The Commission Should Structure the AWS-3 Band Plan to Maximize the Amount of Paired Spectrum.

USCC strongly urges the Commission to focus on maximizing the amount of paired spectrum in deciding which bands to license under the AWS-3 service rules. By maximizing the amount of paired spectrum, the Commission would help to ensure that AWS-3 licensees and their customers receive the substantial benefits related to paired spectrum. For instance, the Commission has noted that paired blocks are "in keeping with the leading mobile broadband technologies."[33] In fact, the vast majority of LTE providers use FDD technologies that require separate, dedicated uplink and downlink spectrum. As a result, "pairing spectrum, where possible, will allow mobile broadband providers to deploy and expand 4G wireless broadband services quickly and efficiently."[34]

In addition to these substantial benefits for carriers of all sizes, access to paired spectrum is particularly critical for small and regional carriers, who typically lack sufficient spectrum holdings to pair with newly-acquired spectrum blocks on an asymmetric basis. If paired spectrum blocks are not available, these carriers would risk acquiring stand-alone blocks without any assurance that they will subsequently gain access to return-link spectrum in other bands.[35] Because of this exposure risk, these carriers would be far less likely to participate in the AWS-3 auction. This decreased auction participation by small and regional carriers would impede the AWS-3 bands' potential to spur much-needed competition in the wireless industry. It also would reduce the likelihood that AWS-3 spectrum will be used to expand broadband access to rural and

[33] *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Notice of Proposed Rulemaking, 27 FCC Rcd 12357, 12401 (2012) ("*Incentive Auction NPRM*").

[34] *Id.* at 12405; *see Service Rules for the Advanced Wireless Services H Block – Implementing Section 6401 of the Middle Class Tax Relief and Job Creation Act of 2012 Related to the 1915-1920 MHz and 1995-200 MHz Bands*, Report and Order, 28 FCC Rcd 9483, 9496 (2013) ("*H Block R&O*") ("[P]airing the lower and upper portions of the H Block will promote the efficient use of this spectrum and allow for the proliferation of wireless services.").

[35] *See H Block R&O*, 28 FCC Rcd at 9496 ("[B]y licensing the H Block as a paired band, we allay the concerns some commenters expressed about the risk of a stranded, standalone block of spectrum that may be unsuitable for mobile broadband use.").

other underserved areas. For instance, in its recent *H Block R&O*, the Commission explained how a "paired spectrum band plan will facilitate the deployment of wireless fixed and mobile services in rural areas."[36]

In contrast, if the Commission maximizes the amount of paired AWS-3 spectrum, the resulting benefits for all carriers, as well as the reduced exposure risks for small and regional carriers, would promote auction competition, and thereby increase auction revenue. As CTIA noted, "paired spectrum is more valuable than unpaired spectrum, making pairing of these spectrum bands critical to meeting revenue goals established by Congress and to maximizing the efficiency of their use."[37] In fact, past auctions clearly demonstrate the higher value carriers assign to paired spectrum. For instance, in Auction 73, "the average price for unpaired spectrum was 54% of the price for paired spectrum, which translates to a 46% discount."[38]

Notably, the Commission has previously recognized the significant benefits of establishing paired AWS-3 allocations. For instance, it found that the "optimal use" of some of the bands now being considered for AWS-3 services "may be achieved by pairing these bands with one another or with other spectrum that has been identified for these services."[39] Maximizing the amount of paired AWS-3 spectrum also would be consistent with the Commission's goals in other recent proceedings.[40]

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[36] *Id.*

[37] CTIA – The Wireless Association, *Finding the FCC's 15 MHz* (*attached to* Letter from Steve Largent, President, CTIA, to Julius Genachowski, Chairman, FCC, GN Docket No. 09-51, p. 11 (Mar. 13, 2013)) ("*CTIA White Paper*")

[38] Coleman Bazelon, *The Economic Basis of Spectrum Value: Pairing AWS-3 with the 1755 MHz Band is More Valuable than Pairing it with Frequencies from the 1690 MHz Band*, The Brattle Group, Inc., ET Docket No. 10-123, p. 16 (Apr. 11, 2011) ("*Brattle Study*").

[39] *Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems*, Notice of Proposed Rule Making and Order, 16 FCC Rcd 596, 622 (2001).

[40] *See, e.g.*, *Incentive Auction NPRM*, 27 FCC Rcd at 12401 ("[W]e strive to maximize the amount of spectrum we can repurpose…"); *id.* ("We further propose to pair these blocks wherever possible…").

B. USCC Supports Pairing the 1755-1780 MHz and 2155-2180 MHz Bands.

USCC again expresses its strong support for the reallocation of the 1755-1780 MHz band and its designation as AWS-3 spectrum,[41] actions that have received broad industry support in past proceedings.[42] As the Commission notes, this band "has several characteristics that make it especially appealing for commercial wireless use."[43] For instance, the 1755-1780 MHz band "is located adjacent to the AWS-1 uplink/mobile band at 1710-1755 MHz and thus, offers the benefits of contiguous bands."[44] Specifically, as T-Mobile previously explained, "the creation of an additional AWS allocation immediately adjacent to the current AWS-1 allocation will allow for more immediate equipment development and deployment."[45] The Commission also notes that the 1755-1780 MHz band "is regionally and internationally harmonized for mobile broadband, raising the potential for commercial operators to benefit from economies of scale achieved by equipment manufacturers developing equipment for a global market."[46] MetroPCS and others have explained that the benefits that arise from these economies of scale include

[41] *See* Comments of United States Cellular Corporation, ET Docket No. 10-142 (Sept. 15, 2010); Comments of United States Cellular Corporation, ET Docket No. 10-123 (Apr. 22, 2011) ("USCC April 2011 Comments"); Reply Comments of United States Cellular Corporation, WT Docket No. 07-195 (July 22, 2011).

[42] *See, e.g.*, Comments of CTIA – The Wireless Association, ET Docket No. 10-142 (July 8, 2011) ("CTIA July 2011 Comments"); Comments of T-Mobile USA, Inc., ET Docket No. 10-142 (July 8, 2011) ("T-Mobile July 2011 Comments"); Comments of Verizon Wireless, ET Docket No. 10-142 (July 8, 2011) ("Verizon July 2011 Comments"); Comments of AT&T, ET Docket No. 10-142 (July 8, 2011); Comments of MetroPCS Communications, Inc., ET Docket No. 10-123 (Apr. 22, 2011) ("MetroPCS April 2011 Comments").

[43] NPRM, 28 FCC Rcd at 11496; *see* Comments of CTIA – The Wireless Association, ET Docket No. 10-123, p. 6 (Apr. 22, 2011) ("CTIA April 2011 Comments") ("This band is particularly well-suited for mobile broadband services…"); Comments of Ericsson, ET Docket No. 10-123, p. 22 (Apr. 22, 2011) ("Ericsson April 2011 Comments") ("So significant are the benefits of using 1755-1780 MHz for mobile broadband that it is worth every effort to find a solution to permit its allocation for that use.").

[44] NPRM, 28 FCC Rcd at 11496; *see* U.S. Dep't of Commerce, *An Assessment of the Near-Term Viability of Accommodating Wireless Broadband Systems in the 1675-1710 MHz, 1755-1780 MHz, 3500-3650 MHz, 4200-4220 MHz, and 4380-4400 MHz Bands*, pp. 2-3 (Oct. 2010) ("*Fast Track Report*") ("This band is particularly attractive to industry since it is adjacent to the 1710-1755 MHz band that was reallocated for AWS mobile stations."); CTIA April 2011 Comments at 7 ("The adjacency of this spectrum to the 1710-1755 MHz AWS-1 band also makes it well-suited for mobile broadband.").

[45] T-Mobile July 2011 Comments at 7; *see* Comments Ericsson April 2011 Comments at 21 ("[T]his band provides numerous significant advantages that will enable a faster rollout of more affordable broadband and devices than if a different band were allocated for commercial use in its place.").

[46] NPRM, 28 FCC Rcd at 11496; *see Fast Track Report* at 3-23 ("[I]t is internationally allocated … allowing for economies of scale and scope in the development of both infrastructure and mobile devices.").

"quicker deployment, reduced costs for both providers and consumers, increasing competitive opportunities and opening the door of mobile broadband to Americans who would otherwise be unable to afford the higher-priced devices."[47]

USCC also agrees with CTIA that, "while this band brings with it the challenge of relocating federal incumbents, this is an area where the wireless industry has significant recent experience."[48] Specifically, as USCC previously explained, both the government and the industry could build upon "the extensive experience and best practices developed in the prior relocation of federal users in the 1710-1755 MHz band to facilitate relocation of similar uses in the 1755-1780 MHz band."[49] As a result, the designation of this band for AWS-3 service would be less difficult than many spectrum bands currently occupied by Federal users.

In addition, as it has done before,[50] USCC strongly endorses the broadly-supported industry proposal filed by T-Mobile to pair the 1755-1780 MHz band with the 2155-2180 MHz band, which the Spectrum Act requires to be auctioned and licensed by February 2015.[51]

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[47] MetroPCS April 2011 Comments at 8; *see* CTIA July 2011 Comments at 7 ("[I]nternational harmonization of spectrum will lower equipment costs and facilitate innovation."); T-Mobile July 2011 Comments at 9 ("Creating a domestic spectrum allocation that is consistent with international use will result in economies of scope and scale and create a more robust equipment market for the band."); Verizon July 2011 Comments at 2 (international harmonization "will help to drive greater economies of scale, reduce the risk of harmful interference, and promote more rapid deployment of mobile broadband networks and services"); Comments of AT&T, ET Docket No. 10-123, p. 3 (June 28, 2010) ("AT&T June 2010 Comments") ("Reallocating the 1755-1780 MHz band is also consistent with international allocations – leading to greater economies of scale and driving down costs for equipment.").

[48] CTIA April 2011 Comments at 6; *see* Ericsson April 2011 Comments at 22 ("The federal uses of this band are predominantly similar to the uses of 1710-1755 MHz that industry has been clearing over recent years…"); T-Mobile July 2011 Comments at 8 ("The 1755-1780 MHz band is, in large part, populated with users similar to those that were in the 1710-1755 MHz band.").

[49] USCC April 2011 Comments at 5; *see* CTIA April 2011 Comments at 7 ("[T]he wireless industry recently has developed a great deal of experience in working with federal incumbents in AWS-1 spectrum, which would serve to ease the transition of the 1755-1780 MHz spectrum from federal to commercial use."); T-Mobile July 2011 Comments at 8 ("[T]he designation of the 1755-1780 MHz band for AWS-3 service will allow wireless providers and incumbent Federal spectrum licensees to use the expertise they acquired from the earlier spectrum relocation efforts when Federal users move from spectrum between 1755-1780 MHz.").

[50] *See* USCC April 2011 Comments at 5.

[51] *See* Letter from Steve Sharkey, T-Mobile U.S., Inc., to Marlene H. Dortch, Secretary, Federal Communications Commission, WT Docket Nos. 10-123 (Jun. 24, 2013), at Attachment, *Industry Roadmap to Assessing the 1755-1850 MHz Band*; Comments CTIA July 2011 Comments at 2 ("CTIA and its members [] strongly favor pairing the 2155 to 2180 MHz band with Federal spectrum at 1755 to 1780 MHz…"); Verizon July 2011 Comments at 3

Significantly, this "proposed pairing would be immediately adjacent to both the uplink and downlink allocations for AWS-1 spectrum at 2110-2155 MHz and 1710-1755 MHz…"[52] In other words, as the Commission recognized, this pairing would "symmetrically extend the AWS-1 band,"[53] and thus greatly advance the public interest.[54] For instance, USCC previously explained how this pairing would permit "infrastructure and device developers to leverage the extensive Band 10 work already completed by the wireless industry, thereby diminishing time to market and development costs for their infrastructure and devices."[55] Similarly, Verizon has noted that pairing the 2155-2180 MHz band with the 1755-1780 MHz band would "promote greater harmonization of spectrum use around the world since both bands are identified globally for use with advanced mobile services."[56] USCC previously detailed how this global harmonization would enable "vendors to achieve economies of scale, resulting in reduced infrastructure and device costs for providers and end users."[57]

As a result, "pairing the 2155-2180 MHz band with the 1755-1780 MHz band would significantly enhance the value of the spectrum to the benefit of consumers, service providers,

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("There is broad industry support for reallocation of the 1755-1780 MHz band and the pairing of that spectrum with the currently unassigned 2155-2180 MHz band…"); MetroPCS April 2011 Comments at 7 ("[T]he 1755-1780 MHz band is well-suited for pairing with the 2155-2175 MHz AWS-3 Block."); Ericsson April 2011 Comments at 23 ("[T]he Commission and NTIA should concentrate their efforts to reallocate the 1755-1780 MHz band for commercial mobile services on a primary basis and to pair that spectrum with the AWS-3 band…").

[52] T-Mobile July 2011 Comments at 7.

[53] NPRM, 28 FCC Rcd at 11496.

[54] *See id.* at 11579 (Statement of Commissioner Pai Approving in Part and Concurring in Part) (describing the 1755-1780 MHz band as "critically important" because "this band, when paired with the 2155-2180 MHz band … will be crucial to making 4G LTE services available to millions of Americans").

[55] USCC April 2011 Comments at 5; *see* Comments of T-Mobile USA, Inc., ET Docket No. 10-123, p. 8 (Apr. 22, 2011) ("Pairing the AWS-3 band with spectrum at 1755-1780 MHz would result in an allocation contiguous to the existing AWS-1 allocation, which would allow the spectrum to be deployed more effectively."); *AWS-4 R&O*, 27 FCC Rcd at 16135 ("[E]xtensions of existing bands can typically be put to use more cost-effectively…").

[56] Comments of Verizon Wireless, ET Docket No. 10-123, p. 7 (June 28, 2010) ("Verizon June 2010 Comments").

[57] USCC April 2011 Comments at 5; *see* Verizon June 2010 Comments at 7-8 ("[G]lobal harmonization is critical in driving greater economies of scale…"); *National Broadband Plan* at 85 ("[P]airing the AWS-3 band with spectrum from the 1755-1780 MHz band has the potential to bring benefits of a global equipment ecosystem to this band.").

and U.S. taxpayers."[58] In this respect, USCC notes that an economic study previously filed with the Commission clearly demonstrates that this pairing would maximize the value of the AWS-3 spectrum. Specifically, a study filed by The Brattle Group found that auctioning the 2155-2175 MHz and 1755-1775 MHz bands as paired spectrum would generate approximately $12 billion.[59] In contrast, pairing the 2155-2175 MHz band with the 1690-1710 MHz band "would reduce expected receipts by $4.7 billion, to $7.3 billion," while an "asymmetric pairing with 1695-1710 MHz would reduce receipts a further $0.9 billion, to $6.4 billion."[60] Far worse would be auctioning the 2155-2175 MHz band as unpaired spectrum, which would produce auction revenue of only $3.6 billion.[61] For these reasons, USCC agrees with T-Mobile that the "2155-2180/1755-1780 MHz spectrum pairing remains an optimum potential wireless broadband allocation,"[62] and thus strongly urges the Commission to reallocate the 1755-1780 MHz band and auction it as paired spectrum with the 2155-2180 MHz band.

C. USCC Supports Pairing the 1695-1710 MHz and 2095-2110 MHz Bands.

USCC, like other carriers, also has previously expressed its support for reallocating the 1695-1710 MHz band, noting the numerous advantages this band would provide wireless carriers and the public.[63] For instance, USCC observed that this band is well-suited for commercial

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[58] Comments of T-Mobile USA, Inc., ET Docket No. 10-123, p. 6 (June 28, 2010); *see* NPRM, 28 FCC Rcd at 11577 (Statement of Commissioner Rosenworcel) (noting that 1755-1780 MHz and 2155-2180 MHz bands "are a more valuable resource auctioned together"); CTIA April 2011 Comments at 6 ("[R]eallocating the 1755-1780 MHz band and pairing it with the AWS-3 spectrum will significantly enhance the value of this spectrum...").

[59] *Brattle Study* at 1 ("Including the additional 5 MHz at 2175 MHz to 2180 MHz and using the entire 25 MHz of the 1755 MHz band would increase this value by about 25%.").

[60] *Id.*

[61] *See id.* at 2.

[62] T-Mobile July 2011 Comments at 7; *see* AT&T June 2010 Comments at 2 ("[I]t remains the highest and best use of spectrum for the Commission to reallocate the 1755-1780 MHz band to commercial use and pair it with the AWS-3 band (2155-2180 MHz).").

[63] *See, e.g.*, USCC April 2011 Comments; *see also* CTIA April 2011 Comments at 12 ("The 1675-1710 MHz band possesses several characteristics … desirable for mobile broadband."); Comments of T-Mobile USA, Inc., ET Docket No. 10-123 (June 28, 2010); Verizon June 2010 Comments; AT&T June 2010 Comments; Comments of MetroPCS Communications, Inc., ET Docket No. 10-123 (June 28, 2010).

operations because it is already allocated on a co-primary basis for non-Federal use and because the spectrum range is appropriate for mobile broadband services.[64] In addition, Verizon has explained how the band's direct proximity to the AWS-1 band at 1710-1755 MHz "would allow licensees to leverage existing technology, network investments, and research and development."[65] The result, CTIA noted, would be greater "efficiency in broadband deployment" and thus quicker "deployment of and adoption of new services, [which] could prove crucial to the continued high performance of America's mobile broadband networks."[66] Verizon also explained how the adjacency of the 1695-1710 MHz band to AWS-1 spectrum would create "a large amount of contiguous spectrum, which would facilitate the delivery of higher throughput data services and promote greater network efficiency."[67] Similarly, Ericsson noted how "placing 'like' services in adjacent spectrum bands reduces the risk of harmful interference between licensees."[68] USCC also believes that the Commission should accord substantial weight to the fact that the NTIA, pursuant to the Spectrum Act, has identified the 1695-1710 MHz band for commercial services.[69]

The Commission seeks comment on several spectrum bands that could be used to satisfy the Spectrum Act's requirement that it identify an additional 15 megahertz of contiguous spectrum for commercial use. For instance, the Commission asks whether it would be

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[64] *See* USCC April 2011 Comments at 3; CTIA April 2011 Comments at 12 ("The 1675-1710 MHz band also shares the favorable propagation and throughput characteristics associated with lower band spectrum.").

[65] Verizon June 2010 Comments at 3-4; *see* Comments of Ericsson Inc, ET Docket No. 10-123, p. 7 (June 28, 2010) ("Service providers and equipment manufacturers may be able to use or adapt existing AWS-1 band equipment to spectrum that effectively could be an extension of that band."); Comments of MetroPCS Communications, Inc., ET Docket No. 10-123, p. 2 (June 28, 2010) ("[T]he 1675-1710 MHz Band is technologically suitable for mobile broadband use given its proximity to other bands that are being successfully deployed for wireless services…").

[66] *CTIA White Paper* at 10-11.

[67] Verizon June 2010 Comments at 4.

[68] Comments of Ericsson Inc, ET Docket No. 10-123, p. 7 (June 28, 2010); *see CTIA White Paper* at 12 ("This use of the 1695-1710 band would also be consistent with the use of the adjacent AWS-1 spectrum (1710-1755 MHz) which is also a mobile uplink band…").

[69] *See* NPRM, 28 FCC Rcd at 11495.

appropriate to choose the 1755-1780 MHz band to fulfill this statutory obligation.[70] USCC again expresses its full support for designating 1755-1780 MHz as an AWS-3 band. However, if the Commission uses this band to fulfill its statutory obligation, fewer paired AWS-3 spectrum blocks would be available for auction, which would diminish the various benefits detailed above related to paired spectrum. Most likely, by identifying the 1755-1780 MHz band as the required additional 15 megahertz of spectrum, the Commission would orphan the 1695-1710 MHz band, which the NTIA identified for commercial use.[71] As detailed above, the optimal pairing for the 1755-1780 MHz band would be with the 2155-2180 MHz band. In contrast, not only do the 1755-1780 MHz and 1695-1710 MHz bands have disparate bandwidths, but their locations on either side of the AWS-1 uplink band weigh heavily in favor of designating both bands as uplink spectrum,[72] which obviously would prevent pairing these bands.

Accordingly, USCC again urges the Commission to "choose spectrum for paired use with the 1695-1710 MHz spectrum which is compatible with and an extension of the existing AWS pairings."[73] As CTIA explained, given that Congress required both the NTIA and the Commission to identify 15 megahertz of spectrum, Congress likely "intended for these two 15 megahertz spectrum bands to complement one another through ready pairing for base and mobile station communications."[74] For instance, if the NTIA and the Commission made these decisions without considering effective pairing, the result could be "two orphaned 15 megahertz spectrum blocks," which would "neither best benefit the public nor fulfill Congress' clear intent to

[70] *See id.* at 11497.

[71] *See id.* at 11495.

[72] *See id.* at 11482 (proposing to license both the 1755-1780 MHz and 1695-1710 MHz bands for uplink operations); *see also id.* at 11495 ("[H]aving additional spectrum that is adjacent to that used for like services will promote efficiency in broadband deployment.").

[73] Comments USCC April 2011 Comments at 3-4.

[74] *CTIA White Paper* at 11.

generate significant revenues to help fund the Public Safety Trust Fund and help reduce the federal deficit."[75]

With respect to the optimal band to pair with 1695-1710 MHz, and thus the additional 15 megahertz of spectrum the Commission should identify pursuant to the Spectrum Act, USCC agrees with CTIA that "the 2095-2110 MHz band is the clear choice for the Commission to identify and reallocate."[76] As CTIA explained, the "2095-2110 MHz band is ideally suited for mobile broadband" because it is "below 3 GHz, is contiguous and adjacent to current allocations and would allow pairing in a readily achievable fashion."[77] USCC also agrees with CTIA that the spectrum sharing issues related to commercial use of the 2095-2110 MHz band "can be addressed by band clearing, sharing, and rule changes."[78] Moreover, this particular pairing is ideal because both bands are directly adjacent to, and compatible with, AWS-1 spectrum, which would "maximize[] the usability of these bands."[79] And, assuming the Commission licenses the 2155-2180 MHz and 1755-1780 MHz band as paired spectrum, the addition of this pairing as well as would create an 85 MHz by 85 MHz paired AWS band that would lower device costs and allow for much faster network deployments.

III. THE PUBLIC INTEREST REQUIRES A CLEAR, *EX ANTE* INTEROPERABILITY REQUIREMENT

Ensuring interoperability in the AWS-3 bands will be essential to achieving the extraordinary potential of this spectrum to substantially increase deployment of wireless broadband services to rural and other underserved areas.[80] Access to interoperable devices by all

[75] *Id.*

[76] *Id.* at 12.

[77] *Id.*

[78] NPRM, 28 FCC Rcd at 11492 (citing *CTIA White Paper* at 13-14).

[79] *Id.* at 11499.

[80] *See H Block R&O*, 28 FCC Rcd at 9498 ("[I]nteroperability is an important aspect of future deployment of mobile broadband services and generally serves the public interest.").

AWS-3 licensees also would enhance economies of scale, expand roaming opportunities, and promote competition, which would lead to greater investment and innovation and lower costs for consumers.[81] USCC therefore strongly urges the Commission to adopt a clear, *ex ante* interoperability requirement.

Specifically, assuming the Commission adopts the pairings detailed above, it should require that: (1) all AWS-3 mobile devices be capable of transmitting across the entire 2095-2180 MHz uplink band and receiving across the entire 1695-1780 MHz downlink band; and (2) all AWS-3 networks permit the use of such mobile devices. This could be accomplished by adding 15 megahertz below and 10 megahertz above the current 3GPP Band 10 specifications. A failure to adopt this requirement would significantly reduce the value of the AWS-3 spectrum blocks located outside of the current Band 10 frequency range. This could encourage the large national carriers to focus on, and thus monopolize, the other AWS-3 blocks, leaving only the "orphaned" lower 15 megahertz and upper 10 megahertz of AWS-3 spectrum potentially available to small and regional carriers, who even collectively lack sufficient market power to drive device development.

USCC notes that adopting an interoperability requirement for the AWS-3 bands would be consistent with the Commission's "longstanding interest in promoting the interoperability of mobile user equipment in a variety of contexts as a means to promote the widest possible deployment of mobile services, ensure the most efficient use of spectrum, and protect and promote competition."[82] A clear, *ex ante* interoperability requirement also would prevent

[81] *See Application of AT&T Inc. and Qualcomm Incorporated for Consent to Assign Licenses and Authorizations*, Order, 26 FCC Rcd 17589, 17619 (2011) ("*AT&T/Qualcomm Order*") ("Promoting interoperability in the 700 MHz band may bring substantial public interest benefits, such as encouraging the affordability and availability of 4G equipment, enhancing competition by facilitating consumer choice, and facilitating the widespread deployment of broadband services and competition, including access to broadband in rural and underserved areas.").

[82] *Interoperability NPRM*, 27 FCC Rcd at 3523, n. 5; *see H Block R&O*, 28 FCC Rcd at 9498 ("The Commission historically has been interested in promoting interoperability, beginning with the licensing of cellular spectrum.").

another situation like that in the Lower 700 MHz band, which has drastically delayed the deployment of advanced services to many rural and underserved areas.[83]

Most fundamentally, an interoperability requirement is necessary in order to promote timely access to a variety of mobile devices by all AWS-3 licensees, including small and regional carriers. Absent a fully interoperable AWS-3 device ecosystem, each carrier could be forced to pursue a unique subset of devices that would be compatible only with its networks. This would create a significant advantage for the few national carriers, whose volume purchases afford them considerable leverage *vis-à-vis* manufacturers. The result is that manufacturers initially, and perhaps exclusively, focus on the needs of these large carriers in order to maximize their profits.

This inability of small and regional carriers to obtain devices significantly impairs their ability to compete by making it difficult to maintain current customers and acquire new ones. Recent Commission findings clearly demonstrate that the need for carriers to offer a variety of the latest mobile devices in order to compete cannot be overstated. For instance, in its most recent wireless competition report, the Commission found that mobile handsets and devices "directly affect the quality of a consumer's mobile wireless experience and can factor into a consumer's choice of a wireless provider."[84] As such, a carrier's "portfolio of handsets and devices may be a significant non-price factor affecting its ability to compete for customers."[85] Accordingly, despite any competitive advantages small or regional carriers may have when it comes to price, local coverage and customer service, consumers may avoid these carriers if they

[83] *See AT&T/Qualcomm Order*, 26 FCC Rcd at 17619 ("[T]he lack of interoperability in the 700 MHz band raises important public interest concerns.").

[84] *Sixteenth Competition Report*, 28 FCC Rcd at 3768; *see Fifteenth Competition Report*, 26 FCC Rcd at 9847 ("Handsets and devices are becoming increasingly central to consumers of mobile wireless services.").

[85] *Sixteenth Competition Report*, 28 FCC Rcd at 3768; *see Fifteenth Competition Report*, 26 FCC Rcd at 9847 ("Recent studies show handsets play an important role for consumers as a basis for choosing providers…").

do not carry a specific handset.[86] This clearly would impact small and regional carriers' ability to truly compete with the national carriers, which would result in higher prices for consumers.[87]

Moreover, even if small and regional carriers eventually manage to secure devices for their AWS-3 networks without an interoperability requirement, these devices likely will be delayed for months or years after the introduction of similar devices by the national carriers. In other words, small and regional carriers would not be able to offer the latest "cutting edge" devices demanded by consumers. This would further solidify the largest carriers' dominant market positions by providing them with a significant "head-start" advantage with respect to acquiring AWS-3 customers, which the Commission has found "can constitute a significant hurdle to new competition."[88]

For instance, even if small and regional carriers eventually have timely access to the latest devices, by then the national carriers would have already established a substantial AWS-3 customer base that, absent interoperability, could not switch providers without purchasing a new handset. These switching costs would effectively bind many consumers to the largest carriers, making it very difficult to persuade them to change carriers.[89] Ultimately, this competitive imbalance would directly harm consumers, many of whom could not justify incurring the potentially significant switching costs to move to another carrier, no matter how much better or

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[86] *See Sixteenth Competition Report*, 28 FCC Rcd at 3844 ("In addition to competing on price and network quality, mobile wireless providers continue to compete by offering consumers a variety of different mobile wireless devices with innovative features.").

[87] *See Interoperability NPRM*, 27 FCC Rcd at 3559 (Statement of Commissioner Clyburn) (noting that a "lack of interoperability means fewer device and service choices for consumers," and that "[f]ewer competitive options results in higher prices.").

[88] *Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers and Other Providers of Mobile Data Service*, Order on Reconsideration and Second Further Notice of Proposed Rulemaking, 25 FCC Rcd 4181, 4192 (2010); *see Interconnection and Resale Obligations Pertaining to Commercial Mobile Radio Services*, First Report and Order, 11 FCC Rcd 18455, 18465 (1996) ("The advantages such incumbency conveys are well understood.").

[89] *See Fifteenth Competition Report*, 26 FCC Rcd at 9808 ("[S]witching costs may not only impact the demand-side of the market but may also increase supply side barriers if potential entrants are deterred from entering the market because they believe it would be difficult to attract consumers away from their existing service provider.").

less expensive the competing service may be.[90] As the Commission recently found, "[i]f enough consumers have the ability and propensity to switch service providers in response to a change in price or non-price factors, then mobile wireless service providers will have an incentive to compete vigorously to gain customers and retain their current customers."[91] In other words, interoperable AWS-3 devices would benefit consumers by increasing competition in pricing and services through a greater ability to switch amongst competing carriers.

In addition, without a universal AWS-3 device ecosystem, which will not develop absent an interoperability requirement, small and regional carriers would incur higher device costs due to a lack of volume production and the resulting loss of beneficial economies of scale.[92] These carriers would be forced to either pass their higher device costs on to consumers in the form of higher retail prices – which most consumers would not pay if given the choice of service providers – or absorb the added costs in order to compete with the prices offered by large carriers. The consequences of this latter approach, however, could be disastrous because device subsidies result in slim, nonexistent, or even negative profit margins, meaning these discounts would directly affect these carriers' bottom lines. Either way, these higher device costs would harm competition by erecting yet another barrier to entry.[93] In contrast, a national carrier could, by itself, order a sufficiently large volume of devices to generate economies of scale, and then pass these savings on to subscribers.

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[90] *See Amendment of the Commission's Rules to Establish New Personal Communications Services*, Memorandum Opinion and Order, 9 FCC Rcd 4957, 5022 (1994) ("*1994 PCS Order*") (noting that broad interoperability "will make consumers more likely to subscribe to PCS because they can easily move from carrier to carrier without having to purchase new handsets…").

[91] *Fifteenth Competition Report*, 26 FCC Rcd at 9808.

[92] *See 1994 PCS Order*, 9 FCC Rcd at 5022 ("[B]road interoperability will increase economies of scale…").

[93] *See Facilitating the Provision of Spectrum-Based Services to Rural Areas and Promoting Opportunities for Rural Telephone Companies To Provide Spectrum-Based Services*, Notice of Proposed Rulemaking, 18 FCC Rcd 20802, 20807 (2003) ("*Facilitating Rural Services NPRM*") ("Any small, new entrant attempting to serve a niche market might face barriers to entry arising from its inability to exploit economies of scale, and will inevitably have less bargaining power to secure equipment, supplies, or negotiate agreements.").

For all of these reasons, absent interoperability (which likely will not occur without an *ex ante* interoperability requirement), small and regional carriers likely would be incapable of providing effective competition to the dominant national carriers because they will not be able to provide the quantity and quality of affordable AWS-3 devices necessary to attract a substantial customer base. With respect to device costs, the largest carriers also would benefit from an interoperability requirement because the resulting device ecosystem would enjoy even greater economies of scale.[94] Notably, the Commission has found that the lower device costs made possible by economies of scale may, "in turn, promote more rapid adoption of mobile wireless services, a greater variety of handsets, and more price competition."[95] These benefits could be particularly advantageous to lower-income consumers, another demographic group that lags in broadband adoption.[96]

Although a lack of timely access to a sufficient quantity of affordable devices is the most direct consequence from a lack of interoperability in a spectrum band, numerous other harms to small and regional carriers and the public arise from the absence of a robust device ecosystem. For instance, because small and regional carriers would lack any assurances that they would have access to a variety of mobile devices desired by consumers, it would be difficult for these carriers to justify expending the substantial sums needed to purchase AWS-3 licenses and build out networks.[97] Not only would this decrease auction competition, and thereby lower auction revenue, it would further decrease the already precarious state of competition in the industry.

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[94] *See Sixteenth Competition Report*, 28 FCC Rcd at 3821-22 ("When competing mobile wireless service providers deploy compatible network technologies, greater economies of scale in the production of both end-user devices and network infrastructure equipment can result, lowering the unit cost of handsets, chipsets, and other [] equipment.").

[95] *Id.* at 3822.

[96] *See National Broadband Plan* at 5 ("While broadband adoption has grown steadily, it is still far from universal. It lags considerably among certain demographic groups, including the poor, the elderly, some racial and ethnic minorities, those who live in rural areas and those with disabilities.").

[97] *See Incentive Auction NPRM*, 27 FCC Rcd at 12415 ("Interoperability has often been important in ensuring rapid and widespread deployment of mobile devices in a new spectrum band.").

An absence of interoperable devices also would decrease broadband deployments to rural and other underserved areas, where small and regional carriers often focus their deployment efforts.[98] In contrast, the national carriers, who would not suffer the same harms from a lack of interoperability, have typically focused their build-out efforts on more densely populated, and thus more profitable, areas. As a result, ultimately it would be consumers in rural and other underserved areas who would suffer from a lack of interoperable AWS-3 devices. Because "most areas without mobile broadband coverage are in rural or remote areas,"[99] this outcome clearly would conflict with the Commission's and President Obama's goal of accelerating the reach of broadband to all Americans. Thus, as it has done in the past, the Commission must strive to adopt spectrum policies, including an interoperability requirement, that will benefit consumers in unserved and underserved rural areas.[100]

A lack of device interoperability also would severely limit essential roaming options for small and regional carriers because it would allow large carriers to rely on the "technical incompatibility" loophole in order to avoid the Commission's data roaming requirements.[101] Unfortunately, this course of action may be likely considering the past conduct of certain national carriers.[102] And, by doing so, these carriers would undermine the "substantial benefits that [otherwise] will be derived from adoption of the data roaming rule."[103]

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[98] *See Interoperability NPRM*, 27 FCC Rcd at 3532 ("[U]nless mobile user equipment is capable of operating on all paired commercial Lower 700 MHz spectrum, the deployment of facilities-based mobile broadband networks could be hampered, particularly in rural and unserved areas.").

[99] *National Broadband Plan* at 22.

[100] *See 700 MHz Second R&O*, 22 FCC Rcd at 15362 ("Rapid deployment and ubiquitous availability of broadband services across the country are among the Commission's most critical policy objectives.").

[101] *See AT&T/Qualcomm Order*, 26 FCC Rcd at 17619 ("Interoperability may [] create greater roaming opportunities…").

[102] *See Data Roaming Order*, 26 FCC Rcd at 5424 ("[P]roviders have encountered significant difficulties obtaining data roaming arrangements on advanced '3G' data networks, particularly from the major nationwide providers."); *id.* at 5427 ("[G]iven the coverage of these nationwide providers, there is a serious risk they might halt the negotiations of roaming on their advanced mobile data networks altogether in the future in the absence of Commission oversight, harming competition and consumers."); *id.* at 5485 (Statement of Commissioner Clyburn) ("The fact that these

For instance, the Commission found that the availability of roaming arrangements promotes competition because they allow smaller incumbent carriers to remain competitive[104] and encourage other carriers to enter a market.[105] As such, the availability of roaming capabilities is "a critical component to enable consumers to have a competitive choice of facilities-based providers offering nationwide access to commercial mobile data services."[106] Moreover, the ability to roam on the networks of other carriers is "particularly important for consumers in rural areas – where mobile data services may be solely available from small rural providers."[107] Data roaming also is especially important for rural consumers because it "encourage[s] service providers to invest in and upgrade their networks and to deploy advanced mobile services ubiquitously, *including in rural areas*."[108]

The ability to enter into roaming arrangements also is particularly important to small and regional carriers because these carriers cannot viably compete against the national carriers without the ability to offer customers broad roaming capabilities.[109] For instance, by building

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merged companies oppose a mobile broadband service roaming rule suggests to me that they might use their increased market power to unreasonably restrict consumer access to competitive alternatives.").

[103] *Id.* at 5427.

[104] *See id.* at 5419 ("[T]he availability of data roaming arrangements can be critical to providers remaining competitive in the mobile services marketplace.").

[105] *See id.* at 5421 ("[R]oaming arrangements can also provide additional incentives to enter a market by allowing network providers without a presence in an area a competitive level of local coverage during the early period of investment and buildout."); *see Sixteenth Competition Report*, 28 FCC Rcd at 3837 ("[R]oaming provides important assistance to new entrants who wish to begin offering service before they have fully deployed their networks.").

[106] *Data Roaming Order*, 26 FCC Rcd at 5419; *see id.* at 5422 ("[R]oaming arrangements help[] provide consumers with greater competitive choices … by encouraging investment and network deployments…"); *National Broadband Plan* at 49 ("Data roaming is important to entry and competition for mobile broadband services…").

[107] *Data Roaming Order*, 26 FCC Rcd at 5419; *see National Broadband Plan* at 49 ("[S]mall rural providers serve customers that may be more likely to roam in areas outside their providers' network footprints.").

[108] *Data Roaming Order*, 26 FCC Rcd at 5443 (emphasis added); *see id.* at 5480 (Statement of Chairman Genachowski) ("[T]he the absence of data roaming guarantees will limit our broadband future by eliminating choices, especially in rural areas, or in some cases delaying or preventing access to mobile broadband at all."); *Update to Rural Broadband Report*, 26 FCC Rcd at 8701 ("Widespread availability of data roaming capability will … promote connectivity for and nationwide access to mobile data service.").

[109] *See Sixteenth Competition Report*, 28 FCC Rcd at 3837 ("[R]oaming remains particularly important for small and regional providers with limited network population coverage to remain competitive by meeting their customers' needs for nationwide service.").

non-interoperable AWS-3 networks, and thereby being able to take advantage of the data roaming rule's "technical incompatibility" loophole, the national carriers could easily differentiate their services in terms of coverage from that of smaller carriers, making their services far more attractive to potential subscribers. This is not differentiating by making their services better; it is differentiating by forcing their competitors to be worse. As the Commission explained in the *Data Roaming Order*, because "consumers expect to be able to have access to the full range of services available on their devices wherever they go," even where a carrier has "built out broadband networks in a regional service territory, [its] inability to offer roaming easily can deter customers from subscribing."[110] In contrast, an interoperability requirement would provide small and regional carriers with the ability to enter into roaming arrangements and thus compete more effectively, which would advance the public interest because greater competition leads to lower prices and greater utilization of broadband data services.[111]

The ability for others to roam on the networks of small and regional carriers also would produce public interest benefits. For instance, customers of the national carriers would have seamless coverage as they travel through more remote areas, where these carriers typically have not deployed their own networks. In addition, the fees associated with this roaming would provide small and regional carriers with a critical revenue source that would allow them to continue to build out their networks, and thereby expand wireless broadband coverage to more Americans and become more viable competitors to the dominant national carriers. Finally, and importantly, carrier diversity provides potential roaming alternatives to public safety users, including users of FirstNet. In addition to providing competitive alternatives, this carrier

[110] *Data Roaming Order*, 26 FCC Rcd at 5419; *see id.* at 5480 (Statement of Chairman Genachowski) ("[P]roviders must be able to offer nationwide voice and data plans to have any chance of competing in today's market.").

[111] *See id.* at 5428 ("[A] rough estimate is that the benefits from the increased competition would be in the billions of dollars per year."); *id.* at 5427 ("[M]illions of American consumers who otherwise might not have full access to mobile broadband services will benefit from adoption of the rule.").

diversity will increase the robustness and availability of service to public safety since separate carrier networks may not be subject to the same outages.

Adopting an interoperability requirement at this stage also is necessary so that potential bidders that are not large enough to drive device development will know in advance of the auction that the AWS-3 bands will conform to the Commission's traditional model of full interoperability. Otherwise, the potential lack of interoperable devices would make it difficult for these bidders to justify expending the substantial sums necessary to acquire AWS-3 licenses and then build out their networks, which would deter their auction participation, and thus the competitiveness of, and revenue derived from, the AWS-3 auction. In contrast, if small and regional carriers are assured that they will have access to a competitive range of devices as a result of an interoperability requirement, they would be far more likely to aggressively participate in the AWS-3 auction. Their expanded participation would, in turn, boost auction competition and revenue and drastically increase the likelihood that AWS-3 spectrum will be used to deploy wireless broadband networks in rural and other underserved areas.

The auction participation of small and regional carriers also would increase as a result of an interoperability requirement because the ability to access a competitive supply of interoperable devices would greatly increase their ability to meet any performance requirements established for the AWS-3 bands. For instance, due to the ongoing lack of interoperability in the Lower 700 MHz band, the Commission recently granted Lower A Block licensees extensions of their interim build-out obligations.[112] The Commission has similarly extended licensees' build-out deadlines on other occasions as well because of a lack of viable, affordable equipment.[113]

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[112] *See Wireless Telecommunications Bureau Extends 700 MHz A Block Licensee Interim Construction Benchmark Deadline Until December 13, 2013*, Public Notice, DA 13-210 (rel. Feb. 13, 2013).

[113] *See, e.g., Request of Warren C. Havens for Waiver or Extension of the Five-Year Construction Requirement for 220 MHz Service Phase II Economic Area and Regional Licensees*, Memorandum Opinion and Order, 19 FCC Rcd 12994, 13001 (WTB 2004) (finding three-year extension for both interim and final build-out deadlines "warranted because it will provide the equipment market time to develop the next-generation digital technology that may allow

Moreover, even if some small or regional carriers sought to participate in the AWS-3 auction despite the considerable risks they would face if the Commission declines to adopt an interoperability requirement, many of these carriers could be prevented from doing so because of their need to rely on outside financing. As CIT Group Inc., a bank holding company, recently explained to the Commission, "[i]f there is any investor or lender concern as to the timely availability of technology necessary for the initiation of revenue service, that concern will have a detrimental effect on the availability of capital, with a commensurate impact on the financial success of the [] auction."[114] Adopting an interoperability requirement at this stage also would prevent those carriers who oppose interoperability from resisting future interoperability efforts by claiming detrimental reliance[115] or a lack of Commission authority.[116]

Finally, USCC stresses that an interoperable AWS-3 device ecosystem, as well as the various benefits detailed above which arise from such an ecosystem, will not develop absent an explicit interoperability requirement. The ongoing lack of interoperability in the Lower 700 MHz band clearly demonstrates that the industry – *i.e.*, the largest carriers – will not voluntarily offer interoperable equipment absent substantial pressure by the Commission.[117] Simply put, without a regulatory requirement, the largest carriers, who alone can drive device development, have no incentive, and in fact have a disincentive, to offer interoperable equipment. Because

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for viable commercial operation of voice or data networks in this band."); *Applications filed by Licensees in the Local Multipoint Distribution Service (LMDS) Seeking Waivers of Section 101.1011 of the Commission's Rules and Extension of Time to Construct and Demonstrate Substantial Service*, Memorandum Opinion and Order, 23 FCC Rcd 5894, 5905 (WTB 2008) (extending final build-out requirement because the licensees had "demonstrated that they faced factors beyond their control, including difficulties in obtaining viable, affordable equipment, that warrant granting a limited extension of time to permit these licensees to continue to build out their licenses.").

[114] Supplemental Comments of CIT Group Inc., Docket No. 12-268, p. 6 (June 14, 2013).

[115] *See* Comments of AT&T Services Inc., WT Docket No. 12-69, p. 20 (June 1, 2012) ("[T]he imposition of this mandate would destroy reliance interests of participants throughout the wireless ecosystem.").

[116] *See id.* at 37 (June 1, 2012) (arguing that an interoperability requirement would be "an unlawful retroactive modification of the B Block licenses").

[117] *See Interoperability NPRM*, 27 FCC Rcd at 3560 (Statement of Commissioner Clyburn) (noting more than a year ago that "the industry has already had more than four years to find a solution.").

these carriers are the preferred customers of device manufacturers, and because they are sufficiently large to independently benefit from economies of scale, they would gain little, and perhaps lose much, by voluntarily agreeing to full interoperability. For instance, interoperability would enhance the competitiveness of small and regional carriers by affording them the ability, through roaming, to offer customers geographic coverage comparable to that offered by the national carriers. In contrast, because large carriers operate geographically extensive networks, the potential incremental coverage available to them and their customers via roaming would be small.[118] Further, to the extent that customers of the large carriers possess devices that are compatible with other carriers' networks, interoperability would reduce customer switching costs and thus enhance the potential for increased competition by making it easier for customers to migrate to rival providers.

For the above reasons, USCC strongly urges the Commission to adopt a clear, *ex ante* interoperability requirement for the AWS-3 bands. Specifically, the Commission should require that: (1) all AWS-3 mobile devices be capable of transmitting across the entire 2095-2180 MHz uplink band and receiving across the entire 1695-1780 MHz downlink band; and (2) all AWS-3 networks permit the use of such mobile devices.

IV. CMA-BASED LICENSE AREAS ARE NECESSARY TO ADVANCE THE PUBLIC INTEREST AND COMPLY WITH STATUTORY REQUIREMENTS

In order to promote competition and ensure the deployment of rural networks, the Commission should adopt small geographic service areas for the AWS-3 licenses.[119] Specifically, as detailed below, licensing the AWS-3 bands on the basis of Cellular Market Areas ("CMAs") would best serve the public interest.

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[118] *See Data Roaming Order*, 26 FCC Rcd at 5426 ("Consolidation in the mobile wireless industry … may have [] reduced the incentives of the largest two providers to enter into such arrangements by reducing their need for reciprocal roaming.").

[119] *See Facilitating Rural Services NPRM*, 18 FCC Rcd at 20833-34 ("[T]he Commission's choice for the initial size of geographic service areas plays an important role in promoting a number of policy goals, including efficiency of spectrum use, competition among providers, and advancing service to rural areas.").

A. CMA-Based Licensing Would Increase Competition, Promote Rural Deployment, and Benefit All Carriers.

Licensing the AWS-3 bands on a CMA-basis is necessary in order to preserve opportunities for small and regional carriers, as well as new entrants, to provide an important source of competition, variety, and diversity in rural and less densely populated areas.[120] As the Commission has observed, CMAs "permit entities who are only interested in serving rural areas to acquire spectrum licenses for these areas alone and avoid acquiring spectrum licenses with high population densities that make purchase of license rights too expensive for these types of entities."[121] CMAs also "represent known area sizes to many business entities, especially small regional and rural providers,"[122] and they "correspond to the needs of many customers, including customers of small regional and rural providers."[123]

Moreover, assuming the Commission establishes population-based performance requirements, larger license areas – even Economic Areas ("EAs") – would permit licensees to meet these construction benchmarks by focusing primarily or even exclusively on urban areas, which would withhold the potential benefits of the AWS-3 spectrum from rural areas, where broadband service is most needed. In contrast, CMA-based licenses would force carriers to serve small towns and rural communities. As the Commission recently noted, "licensing smaller geographic blocks averts the phenomenon of huge tracts of licensed territory being left

[120] *See Service Rules for Advanced Wireless Service in the 1.7 GHz and 2.1 GHz Bands*, Report and Order, 18 FCC Rcd 25162, 25177 (2003) ("*AWS-1 R&O*") ("By being smaller, [CMAs] provide entry opportunities for smaller carriers, new entrants, and rural telephone companies."); *Service Rules for Advanced Wireless Service in the 1.7 GHz and 2.1 GHz Bands*, Order on Reconsideration, 20 FCC Rcd 14058, 14064 (2005) ("*AWS-1 Recon Order*") ("[W]e find that more spectrum should be licensed on an RSA/MSA basis to meet the needs of rural carriers…").

[121] *AWS-1 R&O*, 18 FCC Rcd at 25177; *see Facilitating Rural Services NPRM*, 18 FCC Rcd at 20834 ("Adopting small license areas [] may allow smaller enterprises with limited funding to acquire spectrum licenses.").

[122] *Reallocation and Service Rules for the 698-746 MHz Spectrum Band (Television Channels 52-59)*, Report and Order, 17 FCC Rcd 1022, 1061 (2002) ("*Lower 700 MHz R&O*").

[123] *Id.*

unserved."[124] For these reasons, licensing the AWS-3 bands on the basis of CMAs would be a highly-effective means for the Commission to foster the prompt availability of wireless broadband services to rural markets.[125]

Notably, it is not only small and regional carriers, and the rural customers they serve, that would benefit from licensing the AWS-3 bands on the basis of CMAs. Rather, CMAs allow for more targeted spectrum acquisitions and result in greater efficiencies for carriers of all sizes, while not discriminating in favor of any single business plan.[126] CMA-based licenses allow bidders to acquire precise locations without also acquiring – and excluding other carriers from serving – those additional areas that would otherwise accompany the target locations in a larger license area. For example, large carriers benefit from the use of CMAs because they can acquire additional spectrum in urban areas (where demand is greatest and capacity most constrained) without having to also acquire rural areas they do not intend to serve.[127] At the same time, bidders who focus on rural areas can compete for those licenses without having to compete against bidders seeking far more expansive service areas.[128]

Auction history also demonstrates that, when spectrum is offered on a CMA basis, there are more participants, increased bidding activity, and higher revenues. For instance, in Auction 73, there was a direct correlation between the service area of the license being offered and the

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[124] *AWS-4 R&O*, 27 FCC Rcd at 16122; *see AWS-1 R&O*, 18 FCC Rcd at 25244 (Separate Statement of Commissioner Adelstein) ("Large service areas also can have the effect of creating swaths of fallow spectrum in areas outside of our nation's populated service areas.").

[125] *See AWS-1 R&O*, 18 FCC Rcd at 25177 (explaining that CMA-based licenses "will foster service to rural areas and tribal lands and thereby bring the benefits of advanced services to these areas"); *Rural Broadband Report*, 24 FCC Rcd at 12858 (noting that, in recent years, the Commission has "adopt[ed] smaller license sizes when creating band plans" as a means "to encourage broadband deployment in rural areas").

[126] *See AWS-1 Recon Order*, 20 FCC Rcd at 14066 ("RSAs and MSAs allow entities to mix and match rural and urban areas according to their business plans…").

[127] *See AWS-1 R&O*, 18 FCC Rcd at 25176-77 ("These local service areas will be optimal for incumbent operators who may need spectrum capacity only in limited areas.").

[128] *See Lower 700 MHz R&O*, 17 FCC Rcd at 1061 ("[CMAs] can be the focus of smaller carriers that do not wish to bid on or provide service to larger regions.").

auction revenue generated. Specifically, the CMA-based licenses for the Lower B Block sold for $2.68/MHz-pop, while the EA-based licenses for the Lower A Block sold for $1.16/MHz-pop and the REAG-based licenses for the Upper C Block sold for only $0.76/MHz-pop.[129] In recently noting this fact to the Commission, the Competitive Carriers Association also stressed that the robust participation by small or rural carriers in Auction 73, who were predominantly bidding on CMAs, led to an increase in overall auction revenue. Specifically, "[i]n addition to the almost $2 billion competitive carriers paid for licenses in Auction 73, these small entities also bid $1.2 billion for licenses that larger providers ultimately paid $1.6 billion to win – driving an additional $400 million in revenue that most likely wouldn't have materialized had these carriers not participated."[130]

As a result of these various benefits related to CMA service areas, USCC opposes the Commission's proposal to license the AWS-3 bands on the basis of EAs.[131] The Commission appears to base this proposal in part on its belief that EAs represent a sort of compromise between the needs and desires of the few national carriers and those of small and regional carriers.[132] However, EAs encompass more geography than many small and regional carriers desire to serve, or have the ability to adequately build out. EAs also typically include one or more densely-populated urban areas, making them unaffordable for many small and regional carriers.[133] Licensing the AWS-3 bands on the basis of EAs therefore would greatly diminish the number and variety of auction participants, thereby reducing auction competition and revenue. The lower auction participation by smaller bidders also would reduce the potential for the AWS-

[129] *See* Supplemental Comments of Competitive Carriers Association Regarding 600 MHz Band Plan, Docket No. 12-268, p. 9 (June 14, 2013) ("CCA 600 MHz Band Plan Comments")

[130] *Id.*

[131] *See* NPRM, 28 FCC Rcd at 11502.

[132] *See id.* (stating that EAs "represent a natural market unit for local or regional service areas")

[133] *See id.* ("The Bureau of Economic Analysis defines an EA as 'one or more economic nodes – metropolitan areas or similar areas that serve as center of economic activity – and the surrounding counties that are economically related to the nodes.") (emphasis added).

3 bands to promote competition in the wireless marketplace, as well as risk thwarting the potential of the AWS-3 spectrum to expand broadband access to rural and other underserved areas, where small and regional carriers often focus their deployment efforts.

Moreover, the Commission has found that "choosing a geographic service area that represents a 'middle solution' may be an inefficient approach."[134] In doing so, the Commission explained that, "if nationwide providers need large or nationwide service areas and regional or rural providers need very small areas, then the use of service areas that are medium sized in an attempt to find a 'middle solution' may impose unnecessary transaction costs."[135] In other words, licensing the AWS-3 bands on the basis of EAs may not ideally suit any carriers. In contrast, as noted, CMAs allow for targeted spectrum acquisitions, and thus accommodate the business plans of both large and small carriers. In addition, as detailed below, CMA-based licenses can easily be aggregated by large carriers seeking expansive service territories, while small and regional carriers likely will never gain access to AWS-3 spectrum unless it is initially allocated and auctioned on the basis of CMAs.

CMA service areas would be more appropriate than EAs for other reasons as well. For instance, assuming Protection Zones for incumbent Federal operations are created in some of the AWS-3 bands, CMA-based licensing would permit a greater number of AWS-3 service areas that do not include all or a portion of one of these Protection Zones.[136] Another reason to license the AWS-3 bands using CMAs is that the Commission will license the H Block on the basis of EAs, and it has proposed to similarly license the 600 MHz band on that basis. As a consequence, if the Commission also adopts EAs for the AWS-3 bands, many small and regional carriers, as

[134] *Facilitating Rural Services NPRM*, 18 FCC Rcd at 20837.

[135] *Id.*

[136] *See, e.g.*, *Incentive Auction NPRM*, 27 FCC Rcd at 12411 ("[T]he use of small geographic license areas, such as MSAs/RSAs, could potentially support much greater variation in the amount of reclaimed spectrum from area to area," making it more likely the Commission would "license more wireless spectrum that is not encumbered by potential interference with nearby remaining broadcast television spectrum…").

well as their rural customers, may be wholly excluded from the substantial opportunities the Spectrum Act otherwise would have afforded them.

Based on these public interest harms associated with EA-based licenses, under no circumstances should the Commission license any portion of the AWS-3 bands on the basis of even larger service areas. The use of nationwide or large regional licenses drastically skews an auction in favor of large bidders, effectively foreclosing smaller bidders from participating.[137] Not only do small and regional carriers lack the need for large swaths of territory, they lack the financial resources to compete for nationwide or large regional licenses. Thus, the practical effect of having a band plan that includes large market areas is to place a significant portion of the auctioned spectrum in the hands of the few national carriers, who historically have not given priority to small and rural markets.[138] As a consequence, rural deployment of the innovative and advanced types of services made possible by AWS-3 spectrum likely would be significantly delayed, if not precluded entirely, if the Commission licenses this spectrum on a nationwide or large regional basis.

B. While Large Carriers Can Readily Aggregate Small License Areas, the Theoretical Availability of Secondary Market Transactions is Woefully Insufficient to Provide Spectrum Access to Small and Regional Carriers.

While license areas larger than CMAs would substantially disadvantage small and regional carriers, as well as the rural customers they hope to serve, the same would not be true for larger bidders, who would still have realistic opportunities to aggregate CMA licenses by outbidding smaller bidders.[139] In other words, auctioning small license areas benefits all carriers by allowing them to take a building block approach and assemble as much coverage area as they

[137] *See AWS-1 R&O*, 18 FCC Rcd at 25244 (Separate Statement of Commissioner Adelstein) ("[L]arge license areas raise auction prices so high that many companies that want to serve smaller areas cannot even afford to make a first bid.").

[138] *See, e.g., Fifteenth Competition Report*, 26 FCC Rcd at 9839.

[139] *See Incentive Auction NPRM*, 27 FCC Rcd at 12411 ("[L]icensees may aggregate or otherwise adjust their geographic coverage through auction or through secondary markets.").

desire. For instance, "with respect to larger carriers, the Commission has said that aggregation at auction of smaller spectrum licenses and blocks may provide bidders with greater flexibility to implement their business plans as compared with a more traditional approach of defining an optimal size."[140]

In stark contrast, if the AWS-3 license areas are unnecessarily large, and thus out of the reach of most small and regional carriers during the auction, it would be highly unlikely that these carriers ever gain access to AWS-3 spectrum.[141] Although the Commission proposes to permit AWS-3 licenses to be partitioned, disaggregated or leased,[142] such divestitures have been, and likely will continue to be, the exception rather than the rule.[143] As a consequence, the theoretical availability of these secondary market transactions is unlikely to provide small and regional carriers with timely or adequate access to AWS-3 spectrum.

For instance, there is a reasonable likelihood that the national carriers would resist making any of their AWS-3 spectrum available in the secondary market because of their unknown future spectrum needs. Competition in major urban areas is likely to be fierce and subject to uncertainties about the spectrum resources needed to remain competitive, particularly as consumers' demand for wireless broadband services continues to skyrocket. The large carriers engaged in this intense competition therefore would have a strong incentive not to divest spectrum rights that might put them at a competitive disadvantage or dilute the value of their spectrum assets in case of future sale.

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[140] *AWS-1 Recon Order*, 20 FCC Rcd at 14066.

[141] *See AWS-1 R&O*, 18 FCC Rcd at 25219 ("[B]ased upon the Commission's experience, the auction process provides the best opportunity to date for designated entities to acquire licenses.").

[142] *See* NPRM, 28 FCC Rcd at 11533-35.

[143] *See Service Rules for Advanced Wireless Services in the 2155-2175 MHz Band*, Notice of Proposed Rulemaking, 22 FCC Rcd 17035, 17090, n. 260 (2007) ("*2155-2175 MHz Band NPRM*") ("[S]ome commenters in the rural proceeding … argued that existing secondary market mechanisms are insufficient to promote access to spectrum."); *Rural Broadband Report*, 24 FCC Rcd at 12860 (noting that some commenters stressed that the Commission's "secondary market rules do not always promote spectrum trading and re-use…").

In addition, from the perspective of large carriers, the potential income from leasing or selling spectrum in rural areas is quite small compared to the profits they seek from utilizing the large licenses in major urban markets. As a consequence, they likely, and rationally, could decide to focus their efforts on capturing market share and rolling out new services in their principal markets rather than diverting resources to secondary market transactions. Simply put, the transactional costs of making such spectrum available to companies who actually intend to use it to provide service to rural areas nullify any economic benefits of such a transaction to a large carrier. Further, even if the national carriers did offer some of their spectrum on the secondary market, the smaller carriers in need of this spectrum would be forced to incur these same transaction costs.[144] In contrast, the Commission has found that auctioning licenses "on a CMA basis may allow small and rural providers to obtain license areas that meet their needs while avoiding the transaction costs associated with obtaining access to spectrum in the secondary market."[145]

Moreover, even in the unlikely event that large carriers prove willing to partition and disaggregate large service areas to some extent, they would be very unlikely to cede all control over such licenses to carriers that could pose a competitive threat. Instead, any transfer of spectrum rights to potential competitors likely would be accomplished through partnership or other arrangements that require smaller carriers to relinquish control of, and revenues derived from, the spectrum. Such arrangements are not only unattractive to smaller carriers, they reduce competition because potential competitors of the large carriers become their affiliates.

In sum, small and regional carriers are likely to encounter substantial, and perhaps insurmountable, delays and costs in obtaining spectrum in the secondary market. Consequently,

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[144] *See Facilitating Rural Services NPRM*, 18 FCC Rcd at 20834 ("Since it is costly to aggregate or disaggregate spectrum, it is important that the Commission select initial license sizes and boundaries that are appropriate for the likely users and services to be provided.").

[145] *700 MHz Second R&O*, 22 FCC Rcd at 15319.

the benefits of CMA-based licenses would greatly outweigh any potential diseconomies of scale. The Commission therefore must establish an AWS-3 service area that will permit these carriers to bid directly on AWS-3 licenses rather than be forced to rely on problematic subsequent secondary markets, and thus be dependent on large carrier cooperation.[146]

C. The Commission is Statutorily Obligated to Establish Sufficiently Small License Areas.

Providing sufficiently small license areas also is necessary for the Commission to comply with its statutory obligations. As detailed above, auctioning the AWS-3 bands only on the basis of geographic areas larger than CMAs likely would prevent, or at least significantly deter, small and regional carriers from successfully participating in the auction. This would violate the Commission's obligations to "avoid[] excessive concentration of licenses," to promote "economic opportunity for a wide variety of applicants," and to "ensure that small businesses, rural telephone companies, and businesses owned by members of minority groups and women are given the opportunity to participate in the provision of spectrum-based services."[147] Moreover, because large license areas would exclude those carriers most likely to serve rural markets, and because large service areas permit licensees to satisfy their build-out requirements by concentrating only on densely-populated areas, the Commission would violate its statutory obligations to promote service to all Americans, including those who reside in rural areas.[148] For

[146] *See Facilitating Rural Services NPRM*, 18 FCC Rcd at 20834 ("[I]f the geographic service areas represents the needs of providers, substantial costs may be saved.").

[147] 47 U.S.C. §§309(3)(B), (4)(C)(ii) and (4)(D).

[148] *See* 47 U.S.C. §§309(j)(3)(A), 309(4)(B) and 309(j)(4)(C)(i); *Facilitating Rural Services R&O*, 19 FCC Rcd at 19081 ("One of the Commission's primary statutory obligations, as well as one of its principal public policy objectives, is to facilitate the widespread deployment of facilities-based communications services to all Americans, including those doing business in, residing in, or visiting rural areas.").

these reasons, only by licensing the AWS-3 bands on the basis of CMAs will the Commission meet its stated statutory goals in this proceeding.[149]

V. THE COMMISSION SHOULD NOT ALLOW PACKAGE BIDDING FOR ANY AWS-3 LICENSES

USCC strongly opposes the use of any form of package bidding in the AWS-3 auction because of the bias, complexity, and minimal real-world experience related to this approach. Notably, prohibiting package bidding here would be consistent with Auction 66, which involved licenses for the highly-similar AWS-1 bands. In that proceeding, the Commission explained how "offering all licenses in a single standard SMR auction [would] provide bidders with the simplest and most flexible means of obtaining single AWS-1 licenses or aggregations of AWS-1 licenses."[150] As detailed below, package bidding in the AWS-3 auction would completely undermine the simplicity and flexibility the Commission provided in Auction 66. Also as detailed below, package bidding could virtually eliminate the opportunity for smaller bidders to acquire AWS-3 licenses, without providing any substantial public interest benefits.[151]

A. Package Bidding Would Put Smaller Bidders at a Significant Disadvantage.

USCC stresses that the harms package bidding imposes upon smaller bidders, and the benefits it affords large bidders, could virtually eliminate the opportunity for smaller bidders to acquire AWS-3 licenses.[152] The likely outcome would be a concentration of AWS-3 spectrum in

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[149] *See* NPRM, 28 FCC Rcd at 11502 ("We seek to adopt a service area for all bands that meets several statutory goals. These include facilitating access to spectrum by both small and large providers, providing for the efficient use of the spectrum, encouraging deployment of wireless broadband services to consumers, especially those in rural areas and tribal lands, and promoting investment in and rapid deployment of new technologies and services consistent with our obligations under Section 309(j) of the Communications Act.").

[150] *Auction of Advanced Wireless Services Licenses Scheduled for June 29, 2006; Comment Sought on Reserve Prices or Minimum Opening Bids and Other Procedures*, Public Notice, 21 FCC Rcd 794, 798 (2006).

[151] *See Implementation of Section 309(j) of the Communications Act – Competitive Bidding*, Second Report and Order, 9 FCC Rcd 2348, 2366 (1994) ("*Competitive Bidding Second R&O*") ("[S]ome of the conditions under which the advantages of combinatorial bidding are apt to be the greatest are not likely to be present for most [] auctions.").

[152] *See* McDuff, DeForest, *Analyzing Package Bidding in the FCC Auction No. 31: Upper 700 MHz Band*, p. 12 (2003) ("*McDuff Study*") ("The major disadvantage of introducing package bidding is auctions with package bidding favor larger bidders relative to the standard ascending auction.").

the hands of the few already-dominant national carriers, which would exclude smaller bidders from acquiring the spectrum necessary to serve rural areas. Permitting package bidding in the AWS-3 auction, therefore, would be contrary to the Commission's goal of selecting bidding procedures "which ensure that the full range of qualified bidders have access to the process."[153]

For instance, package bidding greatly increases the likelihood that large bidders will tie-up multiple licenses in large package bids, and thereby exclude smaller bidders with targeted business plans from acquiring the spectrum necessary to serve rural areas. Not only do smaller bidders lack the resources necessary to directly compete for a large package of licenses,[154] they typically have targeted auction strategies, focusing on one or a small number of individual licenses. Smaller bidders, therefore, generally have neither the ability nor desire to compete for a package of licenses. In contrast, "[l]arger and nationwide carriers [] will be inclined to seek large, regional licenses or even a nationwide license if available…"[155] Not only do these carriers have the resources to bid on large packages, the inclusion of package bidding in an auction in fact motivates them to do so because package bidding "creates an incentive for strategic bidding on large packages."[156] As a result of this significant disparity between the resources, needs and motivations of small and large bidders, package bidding can drastically skew an auction in favor of large bidders.

Auction history clearly demonstrates that package bidding favors large bidders and disadvantages smaller bidders. For instance, in Auction 73, which was the only major auction

[153] *Competitive Bidding Second R&O*, 9 FCC Rcd at 2361.

[154] *See McDuff Study* at 6 ("Small and rural carriers effectively cannot compete against large deep-pocket companies seeking regional or nationwide licenses…").

[155] *Id.* at 5.

[156] *Id.* at 12; *see id.* at 12-13 (noting that the "incentive for bidding on the nationwide package is large, and difficult to overcome by smaller bidders.").

that has involved any form of package bidding,[157] Verizon acquired a near-nationwide Upper 700 MHz C Block license consisting of 22 megahertz of spectrum. Notably, the C Block was the only spectrum offered in Auction 73 that was subject to package bidding, and it also was the only spectrum block from which smaller bidders were wholly excluded from acquiring licenses covering any state but Alaska.

Package bidding also can allow large bidders to obtain certain licenses – likely those most desired by small and regional carriers – at a discount because of the well-recognized "threshold problem," which the Commission has described as:

> [T]he difficulty that multiple bidders for the single licenses … that constitute a larger package may have in outbidding a single bidder on the larger package, even though the multiple bidders may value the sum of the parts more than the single bidder values the whole. This may occur because bidders for parts of a larger package each have an incentive to hold back in the hope that a bidder for another part will increase its bid sufficiently for the bids on the pieces collectively to beat the bid on the larger package.[158]
>
> Since all individual bidders can be expected to reason this way, it is likely to be difficult to put together a coalition of bidders to raise their bids enough to beat a combinatorial bid for a larger package.[159]

Notably, the potential for package bidding to award licenses to large bidders at a discount can arise even when there is aggressive bidding for individual licenses. While a package of licenses invariably includes several urban areas, the individual licenses desired by smaller bidders typically do not include the most densely-populated markets. As a consequence, the collective total of the bids for individual licenses often will not include the most expensive license(s) in a package, making it highly improbable, if not impossible, that the aggregate bids

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[157] The only other occasion when the Commission has permitted package bidding was in Auction 51, which offered only six licenses, involved only two bidders, and consisted of only three rounds. Moreover, a single bidder won all five of the licenses actually acquired during Auction 51, and it did so by paying only $134,250 for a single package that included all five licenses. *See Regional Narrowband PCS Spectrum Auction Closes*, Public Notice, DA 03-3006 (Oct. 1, 2003).

[158] *Auction of Regional Narrowband PCS Licenses Scheduled for September 24, 2003*, Public Notice, DA 03-1065, p. 4 (Apr. 3, 2003).

[159] *Competitive Bidding Second R&O*, 9 FCC Rcd at 2366.

for individual licenses will exceed the package bids of the national carriers. In other words, even if a smaller bidder assigns a higher value to a particular license, this valuation can be completely undercut by a national carrier able to include that license within a large package bid that includes urban areas. The result is that package bidding "bias[es] auction results in favor of the combination bid,"[160] disadvantaging all but the largest bidders and likely excluding smaller bidders from any meaningful auction participation.[161] Package bidding also undermines the Commission's policy of awarding licenses to those who value them most highly,[162] and thus risks delaying network deployments.[163]

On the other hand, because large bidders' focus would remain on the densely-populated license areas in the absence of package bidding, they would compete against each other for these individual license areas rather than for packages encompassing these areas. Due to this continuing competition amongst the large bidders, these licenses likely would sell for approximately the same amount as the valuations these bidders would have assigned to the licenses in developing their package bid amounts. At the same time, because the absence of package bidding would provide smaller carriers a reasonable opportunity to acquire licenses for less densely-populated areas, their increased auction activity likely would cause their bids to exceed the values large bidders would have assigned to these markets as part of a package bid.

The threshold problem created by package bidding, and the disadvantages it causes to smaller bidders, has been accepted for years. In fact, a report submitted to the Commission more than 15 years ago specifically noted that "[t]he determinate biases in the [package bidding]

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[160] *Id.* at 2365.

[161] *See McDuff Study* at 8 ("The threshold problem tends to favor large bidders bidding on large packages."); *id.* at 12 ("Smaller bidders will find it difficult to outbid large package bids due to the threshold problem.").

[162] *See Competitive Bidding Second R&O*, 9 FCC Rcd at 2361 ("[L]icenses generally should be awarded to those who value them most highly…").

[163] *See id.* at 2349-50 ("Awarding licenses to those who value them most highly … will likely encourage growth and competition for wireless services and result in the rapid deployment of new technologies and services.").

design … suggest that it could be improved by altering the pricing rule to reduce the biases."[164] For example, the authors suggested that the Commission adopt rules "which specify that winning bids for individual licenses receive a discount."[165] In doing so, they explained that, "because [package] bidders can always bid for individual licenses, bidders who wish to acquire large packages [would be] no worse off in this auction than in the FCC's standard auction, regardless of the discount allowed."[166] As a result, there would be "little risk to experimenting with moderate discounts, say in the range of 10%-30%."[167] Unfortunately, despite this long-standing recommendation, when the Commission has proposed package bidding procedures for past auctions, it has failed to offer any such compensation, or any other potentially mitigating procedure, to those exposed to the threshold problem.

Ultimately, if the Commission permits package bidding for AWS-3 licenses, it will be those living in rural areas that will be harmed. As detailed above, package bidding would make it far less likely that AWS-3 licenses will be awarded to small and regional carriers who, in contrast to the national carriers, typically concentrate their build-out efforts in rural and other underserved areas. By withholding the likely benefits of the AWS-3 spectrum from those living in these areas, package bidding would significantly impede the desire of both the Commission and President Obama to expand broadband access to all Americans, including those living in rural areas.[168] For this reason in particular, the Commission must not permit any form of package bidding for AWS-3 licenses.

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[164] Charles River Associates Incorporated and Market Design, Inc., *Report 1B: Package Bidding for Spectrum Licenses*, CRA No. 1351-00, p. 21 (Oct. 1997).

[165] *Id.*

[166] *Id.*

[167] *Id.*

[168] *See Competitive Bidding Second R&O*, 9 FCC Rcd at 2350 (noting that the Commission designs its competitive bidding rules "to enhance access to telecommunications services by encouraging broad participation in the provision of spectrum-based services and ensuring that spectrum-based services are available to a wide range of consumers.").

B. The Interaction of Package Bidding and Bidding Eligibility Rules Creates Significant Exposure Risks for Smaller Bidders, Further Skewing an Auction in Favor of Package Bids.

The unfortunate irony is that, in attempting to deal with the possibility of "exposure" problems for large bidders, package bidding creates substantial exposure risks for bidders seeking only individual licenses. These risks arise because, in an auction with package bidding, the Commission's auction system considers bids made in previous rounds when determining provisionally winning bids, which can cause a dormant bid for an individual license to become provisionally winning many rounds later.[169] As detailed below, these risks are most likely to be faced by, and are likely to be most harmful to, smaller bidders with limited bidding eligibility and financial resources.

If a bid for an individual license currently is "losing" because of a provisionally winning package bid, the bidder may decline to increase its bid on that license for a number of reasons. For instance, the bidder may lack the necessary eligibility to increase its bid; any further bidding may exceed the bidder's valuation of the license; the bidder may believe that a different license which it finds just as desirable will sell for a lower price; or perhaps the bidder fears that the threshold problem amongst the bidders for the individual licenses within this package will be particularly acute. Regardless of the reason why the bidder decides not to increase its bid, if the bidder lacks sufficient bidding eligibility to acquire multiple licenses, it must choose between two options, both of which harm the bidder and the public interest.

One option would be for the bidder to simply cease auction participation rather than risk submitting a bid on another license only to have its first bid suddenly become provisionally winning. In that situation, the bidder, whose auction strategy and business plan involves only a

[169] *See, e.g., Auction of H Block Licenses in the 1915-1920 MHz and 1995-2000 MHz Bands; Comment Sought on Competitive Bidding Procedures for Auction 96*, Public Notice, 28 FCC Rcd 10013, 10019 (WTB 2013) ("*Auction 96 Notice*"). In contrast, "[i]n a non-package bidding auction, whether a bid on a license becomes provisionally winning depends only upon the bids submitted for that license." *Id.* at 10030.

single license, suddenly could be obligated to pay for multiple licenses. It is extremely difficult, if not impossible, for a bidder to know whether a dormant bid will become a provisionally winning bid during a later round because this process "depends upon the bids submitted for that license, the bids submitted for the packages containing that license, and the bids submitted for other licenses in those packages."[170] This difficulty is further increased because a bid can subsequently become provisionally winning even if it did "not become a provisionally winning bid at the conclusion of the round in which it was placed…"[171] As a result, many bidders in this situation would feel compelled to terminate their auction participation, and thereby forfeit the opportunity to acquire an AWS-3 license, rather than face such uncertain risks. In turn, auction competition, and thus auction revenue, would decrease.

Although the Commission should never presume that a bidder is interested in only a single license, as the above example demonstrates, that is precisely the effect package bidding could create for many bidders. Such an outcome would conflict with the Commission's previous finding "that occasionally bidders may need to change bid strategies as prices rise."[172] It also would prevent a bidder from revising its strategy as an auction progresses because it would bind the bidder to its losing bid placed earlier in the auction – a bid that may remain dormant and thus deprive the bidder of the opportunity to acquire an AWS-3 license. In contrast, without package bidding, a non-provisionally winning bid cannot subsequently be reactivated, which provides bidders with the flexibility necessary to adapt their strategies during the course of an auction.

Our hypothetical bidder's second option would be to pursue another license even though this would expose the bidder to serious risks. Specifically, the bidder would be risking the

[170] *Id.* at 10030.

[171] *See id.* at 10029, n. 49 (noting that a "bid that does not become a provisionally winning bid at the conclusion of the round in which it was placed may become a provisionally winning bid at the conclusion of a subsequent round").

[172] *Notice and Filing Requirements, Minimum Opening Bids, Reserve Prices, Upfront Payments, and Other Procedures for Auctions 73 and 76*, Public Notice, DA 07-4171, ¶ 245 (Oct. 5, 2007) ("*Auction 73 Notice*").

possibility that the bids for the other individual licenses within the same package are sufficiently increased so that the package bid no longer is provisionally winning. This would cause the dormant bid to suddenly, and unexpectedly, become provisionally winning, even if the reactivation of that bid caused the bidder to exceed its bidding eligibility.[173] Moreover, this bidder would be financially liable for this reactivated bid even though the bidder had exceeded its bidding eligibility.[174] In other words, choosing this option could create a binding financial obligation for a license that the bidder had already given up on.

Despite this risk, a bidder may feel compelled to bid on other licenses in order to satisfy its spectrum needs – a decision that may be more likely here than in the past given the current spectrum crunch and the importance of the AWS-3 spectrum to wireless carriers. As a result, the Commission should not adopt bidding procedures that could create a financial obligation for an unwanted license, particularly when the circumstances that create this obligation are completely unpredictable and outside of the bidder's control. Even if a bidder has sufficient resources to purchase both licenses, it should not be forced to do so. It would be far worse, however, to impose this enormous and unintended financial obligation on a bidder who lacks the funds to purchase both licenses. In such a case, the bidder could be forced to default on the license, and thus be liable for a deficiency payment if the license later sells for a lower price.[175] In addition, regardless of the subsequent sale price, the bidder would be liable for a percentage of its bid or the subsequent winning bid, whichever is less.[176] Notably, for auctions with package bidding, the Commission's rules automatically set this penalty at 25% of the applicable bid.[177]

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[173] *See Auction 96 Notice*, 28 FCC Rcd at 10029, n. 49 (noting that a bid placed in an earlier round could become provisionally winning "even if the bidder does not have the bidding eligibility to cover the newly-provisionally winning bid, a situation that would not occur under the FCC's usual SMR auction procedures").

[174] *See Auction 73 Notice* at ¶ 245.

[175] *See* 47 C.F.R. §1.2104(g)(2)(i).

[176] *See* 47 C.F.R. §1.2104(g)(2)(ii).

[177] *See id.*

Even if the bidder is not forced to default on this unwanted license, if the reactivated bid caused it to exceed its bidding eligibility, the bidder and all other bidders for individual licenses within the same package would be put at a further competitive disadvantage. Specifically, because the bidder's eligibility would not be increased in this situation,[178] the bidder would be prohibited from actively competing any further for the license.[179] As a result, if the package bid again becomes provisionally winning, the bidder could not raise its bid, forcing the other bidders to independently attempt to overcome the new package bid. Not only would this virtually guarantee that the package bidder will win, it could allow the package bidder to pay less than if the individual bidder had been able to increase its bid. For these reasons as well, permitting package bidding in the AWS-3 auction would increase the likelihood of an inefficient allocation of licenses, reduce auction participation, and further bias the auction in favor of package bids.

C. Package Bidding Would Add Unnecessary Complexity to the AWS-3 Auction.

Package bidding adds yet another layer of complexity to an auction,[180] and thereby conflicts with the Commission's expressed intent "to select bidding procedures that are not overly complex…"[181] For instance, package bidding greatly increases the number of bid possibilities in each round of an auction, which raises the cost for bidders to evaluate their

[178] *See, e.g., Auction 96 Notice*, 28 FCC Rcd at 10029, n. 49.

[179] *See, e.g., Auction 73 Notice* at ¶ 162 ("In subsequent rounds, the bidder will not be permitted to place new bids if its total activity from provisionally winning bids exceeds its bidding eligibility.").

[180] *See Competitive Bidding Second R&O*, 9 FCC Rcd at 2366 ("Combinatorial bidding would also add one more layer of complexity to implementing an auction."); *Incentive Auction NPRM*, 27 FCC Rcd at 12378 ("Package bidding options generally complicate an auction…").

[181] *Competitive Bidding Second R&O*, 9 FCC Rcd at 2361.

options and probability of success.[182] The fact that package bidding substantially increases the length of an auction[183] also creates additional costs for bidders.[184]

Moreover, the noted potential for a "losing" bid on an individual license to become provisionally winning many rounds later in the auction substantially increases package bidding's inherent complexity. Specifically, in addition to factoring in any currently provisionally winning bids when adjusting auction strategy based on its remaining bidding eligibility, a bidder also must worry about dormant bids being reactivated, the potential for which, as noted, is nearly impossible to accurately gauge. And this difficulty only increases during the course of an auction as the number of past bids that could potentially again become active increases. Not only do the limited resources of smaller bidders make it more difficult for them to address this complexity, but smaller bidders are those most likely to face this situation, which arises only with respect to bids on individual licenses.

For these reasons as well, package bidding uniquely disadvantages smaller bidders who, unlike the national carriers, lack the resources required to cover the added costs created by package bidding, including the need to hire game theorists to assist with the additional layer of auction complexity. Package bidding, therefore, can dissuade these bidders from participating in an auction, further advantaging large bidders and reducing auction competition, and thus auction revenue.[185]

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[182] *See id.* at 2366 ("[C]ombinatorial bidding is non-transparent, that is, it would be difficult for bidders to determine in advance what constitutes a high bid.").

[183] *See* Cybernomics, Inc., *An Experimental Comparison of the Simultaneous Multi-Round Auction and the CRA Combinatorial Auction*, Report to the FCC, p. 19 (2000) ("*Cybernomics Study*") ("The Combination auction takes over 3 times as long as the SMR to finish.").

[184] *See McDuff Study* at 9 ("[P]ackage bidding may make the auctions longer and thus more costly for the bidders.").

[185] *See id.* at 9 ("It is costly for bidders to evaluate such large numbers of package bids. … This may limit entry to the auction and give an advantage to large bidders.").

Package bidding also increases the complexity and cost of an auction for the Commission, which further weighs against the use of package bidding in the AWS-3 auction.[186] This is particularly so given the very limited experience the Commission has with package bidding. In fact, Auction 73 remains the only major auction that included package bidding procedures, and those procedures applied only to the 700 MHz C Block, not to the other spectrum blocks included in Auction 73. As such, the extent of the Commission's real-world experience with package bidding in a major spectrum auction involves a *total* of twelve licenses and three pre-defined packages.[187] In contrast, because the AWS-3 bands will include multiple blocks of spectrum presumably licensed on the basis of service areas far smaller than REAGs, and because these spectrum bands are of great interest and importance to many current and potential wireless service providers, the AWS-3 auction likely will involve a large number of licenses and bidders. As the Commission has observed, although "[t]he complexity of running and participating in a full combinatorial auction may be manageable with 10 bidders and 54 licenses, [] it may not be with hundreds of licenses and bidders."[188] Consequently, permitting package bidding for AWS-3 licenses very well could lead to substantial auction delays, which would make it more difficult for the Commission to meet its statutory obligation to auction and license the AWS-3 bands by February 2015.

D. While Package Bidding Would Significantly Disadvantage Smaller Bidders, the Hypothetical Advantage it Provides Nationwide Carriers is Unnecessary.

While package bidding would subject smaller bidders to the various harms detailed above, large bidders do not require package bidding in order to assemble expansive geographic

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[186] *See Competitive Bidding Second R&O*, 9 FCC Rcd at 2361 ("[I]n selecting auction methods the Commission must take into account the costs of implementation both for the Commission and potential bidders."); Cybernomics at 13 ("Auctions that take a long time to close impose a heavy transaction cost upon participants and the FCC.").

[187] The pre-defined packages included: (1) the eight REAGs covering all 50 states; (2) the two REAGs covering Puerto Rico, the U.S. Virgin Islands and the Gulf of Mexico; and (3) the two REAGs covering Guam, the Northern Mariana Islands and American Samoa. *See Auction 73 Notice* at ¶¶ 139-144.

[188] *Competitive Bidding Second R&O*, 9 FCC Rcd at 2366.

service areas and attain economies of scale.[189] In fact, auctioning only individual licenses may actually benefit large carriers seeking to acquire multiple licenses. For instance, as Sprint recently explained, bidding procedures that pre-define the packages of licenses that will be made available do "not allow for efficient aggregation" because these "predetermined packages of licenses presume[] that each participant has the same aggregation strategy and would value the packages equally."[190] Instead, bidders often "have different packaging needs and strategies."[191] Accordingly, there is no reason to subject smaller bidders to the bias and strategic burdens caused by package bidding when standard auction procedures provide adequate spectrum aggregation opportunities, and in fact may provide more efficient aggregation opportunities.

This is particularly so because, while large carriers will have the opportunity to aggregate individual licenses, it is unlikely that small and regional carriers would ever gain access to AWS-3 spectrum if package bidding allows large carriers to monopolize the AWS-3 auction. Although the Commission will permit AWS-3 licenses to be partitioned, disaggregated or leased,[192] as USCC detailed above, such divestitures have been, and likely will continue to be, the exception rather than the rule. As a consequence, the theoretical availability of these secondary market transactions is unlikely to provide small and regional carriers with any access to AWS-3 spectrum. The Commission therefore must decline to implement package bidding in order to provide smaller carriers with a reasonable opportunity to acquire AWS-3 licenses. By doing so, the Commission would permit each auction participant to address its packaging needs at the

[189] *See Auction of H Block Licenses in the 1915-1920 MHz and 1995-2000 MHz Bands Scheduled for January 14, 2014; Notice and Filing Requirements, Reserve Price, Minimum Opening Bids, Upfront Payments, and other Procedures for Auction 96*, Public Notice, AU Docket No. 13-178, DA 13-1885, ¶ 133 (WTB, rel. Sept. 13, 2013) ("We conclude based on the record and in light of our experience with previous spectrum auctions … that a standard SMR auction format will offer adequate opportunity for bidders to aggregate licenses in order to obtain the level of coverage they desire consistent with their business plans."); *Competitive Bidding Second R&O*, 9 FCC Rcd at 2366-67 ("[T]he simultaneous round auction design offers many of the aggregation advantages of combinatorial bidding without creating a free rider problem that may bias the outcome in favor of combinatorial bids…").

[190] Comments of Sprint Corporation, AU Docket No. 13-178, p. 8 (Aug. 5, 2013).

[191] *Id.*

[192] *See* NPRM, 28 FCC Rcd at 11533-35.

individual license level while not further biasing the auction in favor of the large national carriers.

E. Package Bidding Would Decrease Auction Revenue.

Although a claimed benefit of package bidding is that it maximizes auction revenue, in reality, the various harms caused by package bidding can substantially reduce auction revenue.[193] For instance, because package bidding dissuades smaller bidders from participating in an auction, auction competition, and thus revenue, decreases. And, even if smaller bidders do participate in the auction, the uncertainty and risks created by package bidding very well could chill their bidding. Also, as a result of package bidding's potential to reactivate currently "losing" bids, those bidding on individual licenses may feel they need to suspend or terminate their auction participation rather than risk being held liable for more licenses than their business plans call for, or perhaps they can afford. The possibility that package bidders will receive certain licenses at a discount obviously also can reduce auction revenues.

Auction history demonstrates the negative effect package bidding has on revenue. For instance, in Auction 73, not only did Verizon acquire spectrum – virtually the entire Upper C Block – which exceeded its eligibility limits, it did so at a significant discount compared to the other paired commercial spectrum offered in Auction 73.[194] Specifically, Verizon purchased the Upper C Block, which was subject to package bidding, for $0.76/MHz-pop, while the Lower A and B Blocks, which were not subject to package bidding, sold for $1.16/MHz-pop and $2.68/MHz-pop, respectively.[195] Although anticipated revenue is a valid consideration whenever

[193] *See*, *e.g.*, *Cybernomics Study* at 17 ("The Revenues are higher in the SMR than the Combination auction.").

[194] *See* Comments of MetroPCS, Docket No. 12-268, p. 14 (Jan. 25, 2013) ("[T]he combinatorial bidding process in Auction 73 appears to have played a major role in enabling Verizon to acquire the C Block at a substantially lower per-pop price than the other spectrum sold for.").

[195] *See* CCA 600 MHz Band Plan Comments at 9.

the Commission formulates bidding procedures,[196] it is particularly important here because lower revenue in the AWS-3 auction means reduced funding for our nation's first responders.

F. The Use of Package Bidding Would Violate the Commission's Statutory Obligations.

Permitting package bidding also could run afoul of the Commission's statutory obligations. The complexity, uncertainty, strategic risks, and significantly reduced likelihood of success caused by package bidding would deter small and regional carriers from participating in the AWS-3 auction,[197] leading to a less competitive auction, lower auction revenues, and a high concentration of licenses amongst the few remaining bidders.[198] Moreover, package bidding would primarily disadvantage small and regional carriers, who typically are the only licensees willing to concentrate their build-out efforts in rural and other underserved areas.[199] Package bidding also would permit large carriers to obtain a package of licenses for a total sum lower than what individual licensees are willing to pay on a per-license basis.[200] Finally, the complexity of, as well as the minimal real-world experience with, package bidding could delay the completion of the auction, and thus the distribution of AWS-3 licenses.[201]

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[196] *See Ranger Cellular v. FCC*, 33 F.3d 255, 261 (D.C. Cir. 2003) ("[T]he Commission is free to consider revenue enhancement when determining whether to expand the pool of eligible bidders.").

[197] *See* 47 U.S.C. §309(j)(4)(D) (FCC must "ensure that small businesses, rural telephone companies, and businesses owned by members of minority groups and women are given the opportunity to participate in the provision of spectrum-based services").

[198] *See* 47 U.S.C. §309(j)(3)(B) (FCC must "promot[e] economic opportunity and competition … by avoiding excessive concentration of licenses and by disseminating licenses among a wide variety of applicants, including small businesses, rural telephone companies, and businesses owned by members of minority groups and women").

[199] *See* 47 U.S.C. §309(j)(3)(D) (FCC must promote "efficient and intensive use of the electromagnetic spectrum").

[200] *See* 47 U.S.C. §309(j)(3)(C) (FCC must avoid "unjust enrichment through the methods employed").

[201] *See* 47 U.S.C. §309(j)(3)(A) (FCC must avoid "administrative or judicial delays").

VI. THE COMMISSION SHOULD ADOPT AN AUCTION-SPECIFIC SPECTRUM AGGREGATION LIMIT

USCC agrees with the Commission's proposal to adopt an open eligibility standard for the AWS-3 Bands.[202] All parties should be eligible to hold licenses in these new and valuable spectrum bands. However, USCC also strongly endorses a 25 percent limit on the amount of spectrum any one applicant or affiliated applicants may acquire in a single market in the AWS-3 auction, for the following reasons.

The amount of spectrum acquired in a wireless auction is currently subject to a "screen" analysis.[203] However, in practice, no meaningful limitations have been placed on the amount or type of spectrum that carriers have been allowed to acquire in recent auctions. "Greenfield" spectrum has essentially been wide open, with licensee diversity concerns only being represented by having different sized markets. The effects of this *laissez faire* spectrum policy have, however, sometimes been contrary to the public interest.

Perhaps the leading example is Auction 73, the consequences of which Auction 73 for Lower 700 MHz licensees have been profound and long-lasting. AT&T was the largest buyer of licenses in the Lower B Block, acquiring 227 CMA licenses in that block (704-710 MHz, 734-740 MHz). It also acquired a dominant position in the Lower C Block by virtue of its acquisition of Aloha Communications. Verizon bought seven REAG licenses in the Upper C Block (746-757 MHz, 776-787 MHz), which cover the entire contiguous United States as well as Hawaii. And, in 2010, Verizon purchased the REAG covering Alaska. Both carriers have used those blocks for critical LTE deployments. However, a consequence of AT&T's dominance of the Lower B and C Blocks, and its decision not to acquire Lower A Block licenses, was the development of Band 17, a subset of the Lower 700 MHz A, B and C Block frequencies

[202] *See* NPRM, 28 FCC Rcd at 11527.

[203] *See Union Telephone Company, Cellco Partnership d/b/a Verizon Wireless, Applications for 700 MHz Band Licenses, Auction No. 73,* Memorandum Opinion and Order, 23 FCC Rcd 16787, 16791 (2008).

comprising 3GPP Band 12. Band 17 only covers the Lower 700 MHz B and C Blocks, and is not interoperable with Band 12. The lack of interoperability between devices designed to operate only on the B and C Blocks (Band 17) and devices designed to utilize all three paired Lower 700 MHz blocks (Band 12) greatly hampered the development of networks using the A Block and left this spectrum underutilized at a time of great spectrum scarcity.

This stranding of A Block spectrum generated repeated requests for the Commission to restore interoperability across the Lower 700 MHz band. USCC supported such a rulemaking because the delay in device development caused by the lack of interoperability greatly disadvantaged carriers planning to utilize A Block licenses in their 4G deployments.[204] Notably, that lack of interoperability may not have arisen if there had been a greater diversity of license winners in the A, B and C Blocks from the outset. Specifically, if carriers held spectrum across the different blocks, they likely would have worked together to develop technology and drive a robust device ecosystem. Although USCC greatly appreciates the recent interoperability agreement, it notes that the task of ensuring interoperability in the Lower 700 MHz band was more complex than it need have been.

The lesson to be drawn from this experience is that the Commission's public interest objectives in *every* auction should include fostering a competitive wireless industry, which would serve the long-term economic interests of the United States. Such a policy would indeed be responsive to the mandate of Section 309(j)(3)(B) of the Communications Act[205] to "avoid excessive concentration of licenses" and to disseminate licenses among "a wide variety of

[204] Recently, AT&T announced its conditional support for working toward 700 MHz interoperability over time in an *ex parte* filing in the relevant docket. *See* Letter from Joan Marsh, AT&T, to the Hon. Mignon Clyburn, Chairwoman, FCC, WT Docket 12-69 (Sept. 10, 2013). This is a welcome development, but achieving a result which serves the public interest should not be dependent on voluntary actions taken by the largest carriers.

[205] 47 U.S.C. §309(j)(3)(B).

applicants."[206] Experience has shown that there is no way to do that other than limiting the amount of spectrum which the largest carriers may acquire in a given auction. Case-by-case review simply does not work, at least not in the auction context.

Thus, USCC proposes that no AWS-3 auction applicant be allowed to acquire more than 25 percent of the spectrum made available for auction in any licensed market area. The proposed spectrum aggregation limit would promote competition and a diversity of licensees, and would provide structural encouragement for interoperability and roaming.

There also is precedent for such auction limitations. Prior to 2000, former §24.710 of the Commission's rules prohibited a PCS "auction applicant from winning (but not from acquiring in the secondary market) more than 98 C and F Block licenses."[207] That rule was repealed only because of the then-applicable wireless spectrum "cap," for which there is no equivalent today.[208] It should also be noted that, at the beginning of the PCS auctions in the mid-1990s, the Commission's rules prohibited an entity with an ownership interest in a cellular license in a given market amounting to 20 percent or more from obtaining a 30 MHz PCS license if the populations of the cellular system and PCS license areas overlapped significantly. Moreover, the Commission's cellular cross-ownership rule forbade common ownership of cellular licenses in the same market, and after 1994, the Commission employed strict "per market" 45 MHz and then 55 MHz spectrum "caps" to limit spectrum concentration.[209] And while the Commission has relaxed all of those limitations over time as more wireless spectrum became available and as new competitors entered the market, the precedents are relevant to this allocation of new and highly

[206] *See Incentive Auction NPRM*, 27 FCC Rcd at 12484.

[207] *Amendment of the Commission's Rules Regarding Installment Payment Financing for Personal Communications Services (PCS) Licensees*, Sixth Report and Order on Reconsideration, 15 FCC Rcd 16266, 16292 (2000) (internal citation omitted).

[208] *Id.* at 16292-95.

[209] *See* former §§24.204, 20.6 and 22.942 of the Commission's Rules.

desirable wireless spectrum, especially as the industry's period of new competitor entry has been followed by a period of much greater industry concentration.

USCC recognizes the complexity of the Commission's task in developing a workable AWS-3 band plan in light of the complexities involved in "sharing" spectrum with federal licensees and in mitigating possible interference within and adjacent to the AWS-3 bands. Implementing reasonable spectrum limitations in this context will obviously not be easy. However, the Commission should consider it an important principle in developing final rules that one or two carriers should not be permitted to dominate the AWS-3 bands.

The last decade has witnessed the disappearance of many small and almost all mid-sized wireless carriers.[210] If the remaining Tier II and Tier III carriers are to have a fighting chance to survive and prosper in the coming years, they absolutely must have access to this spectrum from the outset. A result similar to that in Auction 73 is simply not acceptable. The Commission's approach in recent years to preserving a competitive wireless marketplace has not prevented the unprecedented concentration of the industry. As a new round of critically-important auctions approaches, it is time to try a new approach.

VII. THE COMMISSION SHOULD ADOPT A SUFFICIENTLY LONG LICENSE TERM, AWARD RENEWAL EXPECTANCIES, AND AVOID ADDITIONAL LICENSE RENEWAL STANDARDS

Due to the highly-encumbered nature of the AWS-3 bands, the Commission should establish a sufficiently long initial license term combined with a license renewal expectancy in order to encourage the investment necessary to develop this spectrum. For instance, an AWS-3

[210] Such once prominent wireless carriers as Western Wireless Corporation, Alltel Wireless, Dobson Cellular, Midwest Wireless, Aloha Partners and SunCom Wireless Holdings are no more. In March 2013, MetroPCS was added to the long list of formerly independent wireless carriers and Leap Wireless has now been proposed to be added to the list. *See, e.g., In the Matter of Applications of Deutsche Telecom AG, T-Mobile USA, Inc. and MetroPCS Communications, Inc. For Consent to Transfer of Control of Licenses and Authorizations*, Memorandum Opinion and Order and Declaratory Ruling, DA 13-384 (WTB, IB rel. Mar. 12, 2013); *AT&T Inc., LeapWireless International, Inc. et.al., Seek Consent to the Transfer of Control of AWS-1 Licenses, PCS Licneses, and Common Carrier Fixed Point to Point Licnesees, and International 214 Authorizations, and The Assignment of One 700 MHZ license*, Public Notice, DA 13-1837 (rel. Aug. 28, 2013).

licensee in either the 1695-1710 MHz or 1755-1780 MHz band will not be able to begin network deployment until the incumbent Federal users in these bands have been relocated or the Federal users have approved of the licensee's frequency coordination proposal. Similarly, the 2095-2110 MHz band is currently used for both Federal operations and the Broadcast Auxiliary Service. And, while no Federal users operate in the 2155-2180 MHz band, there are non-Federal Fixed Microwave Service and BRS licensees in this band that must be relocated prior to the introduction of AWS-3 services.

USCC therefore urges the Commission to adopt an initial AWS-3 license term of 15 years. The Commission has previously concluded, including with respect to the AWS-1 bands, that a longer initial license term is necessary where the spectrum, like here, is occupied by incumbent users. For instance, when it adopted a 15-year initial AWS-1 license term, the Commission explained that this longer term was needed in order to account for "the relocation and band clearance issues associated with these bands" and to "encourage the investment necessary to develop these bands" by providing "investors with the necessary assurances that a sufficient amount of time [would] be available to recoup the initial costs of developing and deploying advanced wireless networks in these bands."[211] Absent this longer initial license term, the potentially significant time that will be required to either relocate incumbent users in the AWS-3 bands or to coordinate with any remaining Federal users would cause AWS-3 licensees to have initial license terms shorter than the ten-year term generally afforded to CMRS licensees.[212] On the other hand, because a 15-year license term would provide sufficient time to compensate for the highly-encumbered nature of the AWS-3 bands, both incumbents and new

[211] *AWS-1 R&O*, 18 FCC Rcd at 25190.

[212] *See* NPRM, 28 FCC Rcd at 11528 ("The Commission has adopted 10-year license terms for most wireless radio services licenses.").

entrants would be more inclined to participate in the auction, and would have a far better opportunity to develop a full suite of services that cover the broadest possible geographic area.

Based on these same considerations, USCC strongly urges the Commission to award renewal expectancies to AWS-3 licensees. Absent a renewal expectancy, it is very difficult for a licensee to justify expending the substantial sums needed to acquire spectrum licenses and deploy networks. Similarly, obtaining outside financing for these purposes becomes far more difficult if a licensee does not have a reasonable expectation that its license will be renewed. In order to determine a licensee's right to a renewal expectancy, USCC supports the use of the factors set forth in the NPRM. Under this standard, an AWS-3 licensee would receive a renewal expectancy if it maintained the level of service required by any interim construction requirement, met the final construction requirement, and otherwise complied with the Communications Act and the Commission's rules and policies.[213] USCC also believes that an AWS-3 licensee should obtain a renewal expectancy at the end of subsequent license terms if the licensee continues to provide at least the same level of service that it provided at the end of its initial license term.[214]

Notably, in addition to adopting an initial license term of 15 years for the AWS-1 spectrum, the Commission provided those similarly-situated licensees an opportunity to obtain a renewal expectancy. Moreover, USCC details below why the Commission should apply the "substantial service" construction standard to AWS-3 licenses, as it did for AWS-1. As the Commission noted in the AWS-1 proceeding, the combination of a 15-year initial license term, a renewal expectancy, and a substantial service construction standard helps to "provide a stable regulatory environment that will be attractive to investors, and thereby encourage development of these frequency bands."[215] The Commission therefore should mirror its approach to AWS-1

[213] *See id.* at 11532.

[214] *See id.*

[215] *AWS-1 R&O*, 18 FCC Rcd at 25191.

in order to promote those same public interest benefits. It would also be consistent with the Commission's previous proposals for portions of the spectrum now being considered for AWS-3 services. For instance, in addition to previously proposing to apply the "substantial service" standard the 2155-2175 MHz band, the Commission proposed to grant these licensees "a renewal expectancy similar to that afforded PCS, cellular, and Part 27 licensees."[216] In doing so, the Commission again noted how this approach promotes network deployments by allowing licensees to obtain outside financing more easily.[217]

Although the Commission recently declined USCC's proposal to adopt a renewal expectancy for the H Block, USCC believes the Commission overstated the rights awarded to a licensee from a renewal expectancy. For instance, the Commission declined to adopt a renewal expectancy because it did not want "to state categorically that a licensee that simply meets the interim and final performance requirements will automatically obtain a renewal expectancy."[218] A renewal "expectancy," however, is just that. It does not provide a concrete assurance that a license will be renewed, and the Commission would remain free not to grant a renewal if the circumstances truly warranted.[219] At the same time, however, by codifying the availability of a renewal expectancy for AWS-3 licensees, the Commission would provide additional certainty

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[216] *2155-2175 MHz Band NPRM*, 22 FCC Rcd at 17080; *see id.* ("In the case of these licensees, a renewal applicant receives a preference or renewal expectancy if the applicant has provided substantial service during its past license term and has complied with the Communications Act and applicable Commission rules and policies."); *see also Service Rules for Advanced Wireless Services in the 1915-1920 MHz, 1995-2000 MHz, 2020-2025 MHz and 2175-2180 MHz Bands*, Notice of Proposed Rulemaking, 19 FCC Rcd 19263, 19292 (2004) ("We propose a 10-year license term and to apply the renewal expectancy provisions of section 27.14 to licensees in these bands.").

[217] *See 2155-2175 MHz Band NPRM*, 22 FCC Rcd at 17081; *see Amendment of the Commission's Rules Regarding the 37.0-38.6 GHz and 38.6-40.0 GHz Bands*, Report and Order and Second Notice of Proposed Rule Making, 12 FCC Rcd 18600, 18626 (1997) ("*37-40 GHZ R&O*") ("[A]ffording 39 GHz providers the opportunity to earn a renewal expectancy will facilitate investment for their industry, provide stability over the long run, and better serve the public by reducing the possibility that proven operators will be replaced with less effective licensees.").

[218] *H Block R&O*, 28 FCC Rcd at 9569.

[219] For instance, the Commission noted that a licensee should not expect to receive a renewal "where it met the applicable 'snap shot' interim benchmark by providing signal coverage and offering service for a single day just prior to the interim benchmark, but then merely offers service once every 180 days to avoid permanent discontinuance of operation until reaching the end-of-term benchmark." *Id.*

that may prove critical to, for example, obtaining outside financing. Codifying this expectation would be particularly appropriate given that the Commission agreed with USCC in the H Block proceeding "that a licensee that obtains a license renewal at the end of the initial license term … and then maintains or exceeds the end-of-term … percent population coverage and offering of service level through subsequent license terms, reasonably could expect, absent extraordinary circumstances, that it would receive subsequent license renewal."[220] USCC also notes that the encumbered nature of the AWS-3 bands differentiates this spectrum from the H Block.[221]

If the Commission decides not to follow its AWS precedent and establish a renewal expectancy for AWS-3 licensees, USCC believes that the next best approach would be to allow competing renewal applications and, in their absence, process unopposed applications in the same manner as renewals in the cellular and PCS services. Although inferior to establishing a renewal expectancy, this tested approach is far superior to the Commission's proposal to impose "renewal requirements consistent with those adopted in the *700 MHz First Report and Order*, the *AWS-4 Report and Order*, and the *H Block R&O*."[222] There is no reason to adopt those unworkable and unnecessary standards for the AWS-3 bands, especially given the interference constraints under which AWS-3 licensees may have to operate during their initial license terms.

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[220] *Id.* at 9569-70.

[221] *See id.* at 9560, n. 629 (noting that the AWS-1 service rules "took into account the uncertainty associated with the timing of clearing Federal operations from the band, which does not need to occur here.").

[222] NPRM, 28 FCC Rcd at 11531. USCC notes that the approach taken in the *700 MHz First Report and Order* is not similar to the onerous requirements proposed in the *WRS Renewals NPRM*. Specifically, in the *700 MHz First Report and Order*, the Commission simply listed a "variety of factors" encompassed by the substantial service determination in the renewal context. *See Service Rules for the 698-746, 747-762 and 777-792 MHz Bands*, Report and Order and Further Notice of Proposed Rulemaking, 22 FCC Rcd 8064, 8093-99 (2007). In contrast, in the *WRS Renewals NPRM*, the Commission proposed a detailed and onerous "renewal showing" that would require the filing of a "detailed description of the applicant's provision of service during the entire license period and address" various other factors that would be subjectively judged by the Commission to determine a licensee's level of service to the public. *See Amendment of Parts 1, 22, 24, 27, 74, 80, 90, 95, and 101 To Establish Uniform License Renewal, Discontinuance of Operation, and Geographic Partitioning and Spectrum Disaggregation Rules and Policies for Certain Wireless Radio Services*, Notice of Proposed Rulemaking and Order, 25 FCC Rcd 6996, 7043-44 (2010).

USCC, like virtually all other wireless licensees, set out its objections to creating a new wireless "renewal paradigm" at length more than three years ago in response to the Commission's *WRS Renewals NRPM*.[223] USCC incorporates those comments by reference here, and notes that the considerably delayed action in that proceeding may indicate that the Commission has reservations with respect to its proposed rules. To summarize briefly, the proposed renewal standards are ambiguous and overly subjective, and thus profoundly ill-advised and contrary to the public interest. They would create investment-killing uncertainty concerning the security of AWS-3 licenses as there would be no assurance that a license would be renewed even if a licensee had met all applicable performance requirements, however onerous, and otherwise complied with the Commission's rules.

Moreover, by separating renewal requirements from build-out standards and by imposing additional and subjectively-evaluated renewal requirements not found in the Commission's rules, the proposed standards would generate enormous and unnecessary paperwork burdens. In contrast, the Commission has noted that "combin[ing] the showing traditionally required for build-out and the showing required to acquire a renewal expectancy into one showing at the time of renewal" has the benefit of "impos[ing] the least regulatory burden on licensees as possible" while still permitting the Commission to comply with its statutory responsibilities.[224] The proposed standards also would repudiate the idea of "flexibility" in meeting customer needs, and would fail to acknowledge either the economic and interference constraints faced by licensees or the problem that sometimes meeting one service objective may mean not being able to meet others. It may be that the Commission would not, in fact, deny renewal applications by licensees

[223] *See*, *e.g.*, Comments of United States Cellular Corporation, WT Docket No. 10-112 (Aug. 6, 2010); Reply Comments of United States Cellular Corporation, WT Docket No. 10-112 (Aug. 23, 2010).

[224] *37-40 GHZ R&O*, 12 FCC Rcd at 18625.

that have met their build-out requirements and otherwise complied with the Commission's rules. However, if that is to be the case, there is no need for the newly-proposed standards.

VIII. THE COMMISSION SHOULD PROVIDE LICENSEES SUFFICIENT FLEXIBILITY IN HOW THEY DEPLOY THEIR NETWORKS, AND IN NO EVENT SHOULD IMPOSE UNDULY STRINGENT BUILD-OUT REQUIREMENTS OR DRACONIAN PENALTIES

Although the Commission must take certain steps to ensure adequate spectrum utilization and rapid deployment of new wireless services, inflexible performance requirements are unnecessarily burdensome, unjustified by market realities, and contrary to sound economic principles and business strategies. Their effect is to discourage new investment, limit service to the public, force suboptimal network deployments, and diminish auction revenues, both because of decreased auction participation and because the value of each license is diminished. Inflexible performance requirements can foreclose desirable spectrum uses and cause spectrum to lie fallow for a longer period of time than with flexible construction requirements. The Commission therefore must ensure that any performance requirements applied to the AWS-3 bands not only promote robust deployment but adequately reflect the practical realities of deployment in a band newly-authorized for mobile broadband service. And the Commission should not unfairly punish licensees – especially in rural areas – who cannot engage in aggressive build-out for perfectly good economic or situational reasons.

A. Inflexible Build-Out Requirements are Unnecessary, Arbitrary, and Ignore Market Realities.

Creating a regulatory structure that imposes a single dimension on network investment would be antithetical to the Commission's long-held preference for market-driven service requirements.[225] Where licensees spend millions, if not billions, of dollars to acquire spectrum at

[225] *See, e.g., Amendments of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands*, Report and Order and Further Notice of Proposed Rulemaking, 19 FCC Rcd 14165, 14283 (2004) ("*Facilitating Broadband Access R&O*") ("[W]e believe a market-oriented approach to spectrum policy best ensures

auction, market incentives already provide every motive for carriers to start earning revenues as quickly as possible in order to obtain returns on these substantial investments.[226] Carriers' urgent need for additional spectrum also provides a powerful incentive to build out their licensed territories expeditiously. Winning AWS-3 bidders therefore will have a significant economic incentive to put the spectrum to beneficial use as soon as practicable, and a substantial disincentive to warehouse the spectrum for any considerable period of time.[227]

USCC therefore urges the Commission to avoid build-out requirements beyond the reasonable requirement to provide "substantial service." Additional requirements will have the effect of imposing artificial government-mandated burdens when market forces are adequate – and preferred – to assure that facilities will be constructed and operated in the public interest once sufficient demand exists and once a particular licensee's business plan permits. Unduly stringent build-out requirements would raise the risk of license forfeiture and reduce the flexibility of carriers to design and deploy their networks in a manner that best promotes their business plans. Further, there often are circumstances outside the control of a licensee that inhibit its ability to meet a particular benchmark.

As such, the Commission has in the past appropriately balanced the need for performance requirements with the ability to provide flexibility to licensees to meet these requirements. Notably, the Commission adopted a substantial service requirement for the AWS-1 bands in order to provide licensees "greater flexibility to determine how best to implement their business

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the build-out of wireless facilities and broader provision of wireless services. We believe that economic forces will guide competing providers to innovate and broaden deployment of services.") (internal citation omitted).

[226] *See Competitive Bidding Second R&O*, 9 FCC Rcd at 2358 ("Auctions are [] likely to reinforce the desire of licensees to make efficient and intensive use of [] spectrum. … [T]he licensees' need to recoup the out-of-pocket expenditure for a license should provide additional motivation to get the most value out of the spectrum.").

[227] *See Fifteenth Competition Report*, 26 FCC Rcd at 9716 ("To create a customer base, a new facilities-based entrant must provide network coverage that is sufficient to attract new customers…").

plans," as well as "the flexibility required to accommodate [] new and innovative services…"[228] USCC submits that there is no need in this instance to depart from well-functioning precedent, particularly when that precedent involves spectrum which shares so many similarities with the AWS-3 bands.

Another substantial problem is that fixed coverage requirements have the inevitable effect of forcing carriers to build networks according to government-imposed timetables rather than according to market demands. The Commission has recognized that this leads to various public interest harms because "construction benchmarks focusing solely on population served or geography covered do not necessarily reflect the most important underlying goal of ensuring public access to quality, widespread service."[229] In fact, "construction benchmarks that mandate population- or geographic-specific coverage might hinder licensees from serving niche or less populated areas, and might unintentionally discourage construction in rural areas."[230] In contrast, "the substantial service standard provides licensees with the flexibility to provide coverage to other, less populated areas and still satisfy its coverage requirement without necessarily focusing on more urban population centers."[231] At the same time, licensees would have ample incentive to rapidly deploy ubiquitous, high-quality networks.[232]

Uniform percentage coverage standards also are inherently arbitrary. There is no objective, concrete basis for determining whether a particular percentage of population served is either too high or too low, or whether a certain timeframe to meet these benchmarks is too short

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[228] *AWS-1 R&O*, 18 FCC Rcd at 25192. The Commission also previously sought comment on similarly adopting the substantial service standard for the 2155-2175 MHz band. *See 2155-2175 MHz Band NPRM*, 22 FCC Rcd at 17084.

[229] *Facilitating Broadband Access R&O*, 19 FCC Rcd at 14284.

[230] *Facilitating Rural Services R&O*, 19 FCC Rcd at 19120; *see Facilitating Broadband Access R&O*, 19 FCC Rcd at 14284 ("[M]erely satisfying such benchmarks does not necessarily demonstrate adequate deployment in rural areas, to niche markets, or to discrete populations or regions with special needs.").

[231] *Facilitating Rural Services R&O*, 19 FCC Rcd at 19122.

[232] *See Facilitating Broadband Access R&O*, 19 FCC Rcd at 14283 ("We believe that establishing more flexible rules will result in ubiquitous, high-quality service to the public and at the same time encourage investment by increasing the value of licenses. We believe more flexible rules will make licensees more economically viable…").

or too long. Uniform build-out requirements also fail to properly account for dramatic variations in population density from one region to another. There is no reason to assume that the optimal build-out will be the same in a densely-populated northeastern state and a sparsely-populated state in the western plains. Giving licensees greater flexibility allows each carrier to take into account variances in the competitive landscape, population density, and other important demographics pertaining to particular services and licenses.

The greater flexibility provided by the substantial service standard is especially important where, as here, the spectrum to be auctioned is highly-encumbered. For instance, with respect to the AWS-1 bands, the Commission explained that the "substantial service standard is particularly appropriate [] because the incumbency of federal and other current licensees in these bands would make specific benchmarks for all new licensees inequitable."[233] In contrast, the substantial service standard provides the Commission with the necessary "flexibility to consider the particular circumstances of each licensee and how the level of incumbency has had an impact on a particular licensee's ability to build-out and commence service in its licensed area."[234] If the Commission nevertheless determines that more concrete guidance is necessary to incentivize licensees to quickly deploy service and avoid spectrum warehousing, as well as to more objectively gauge the adequacy of the deployment of AWS-3 networks, specific benchmarks and timetables could "be assimilated into the substantial service framework as safe harbors, rather than as goals unto themselves."[235]

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[233] *AWS-1 R&O*, 18 FCC Rcd at 25192; *see Lower 700 MHz R&O*, 17 FCC Rcd at 1079 ("The substantial service standard is particularly appropriate for the Lower 700 MHz Band given the highly-encumbered nature of this particular spectrum. … Because new licensees in different geographic areas will not be similarly situated due to the varying levels of incumbency, specific benchmarks for all new licensees would be inequitable.")

[234] *AWS-1 R&O*, 18 FCC Rcd at 25192. USCC notes that the Commission recently declined to use the AWS-1 bands as a basis in part because, unlike here, the H Block spectrum is clear of incumbent operations. *See H Block R&O*, 28 FCC Rcd at 9560, n. 629 ("Build-out requirements for AWS-1 spectrum took into account the uncertainty associated with the timing of clearing Federal operations from the band, which does not need to occur here.").

[235] *Facilitating Broadband Access R&O*, 19 FCC Rcd at 14286.

B. Stringent Build-Out Requirements Disproportionately Harm Small and Regional Carriers, and Make Rural Deployments Less Likely.

Stringent construction timetables and benchmarks weigh most heavily on new entrants and small and regional carriers because these licensees do not have extensive, if any, existing networks that can serve as a foundation to facilitate meeting these requirements.[236] In contrast, the national carriers have extensive economic resources and existing networks and infrastructure which make the application of stringent performance requirements far less damaging. In other words, the "[i]nfrastructure capital expenses for a new entrant can be higher than those for existing service providers,"[237] which causes stringent build-out requirements to favor large incumbent carriers and further decrease competition in the wireless industry.

Large incumbent providers also typically already own a significant number of towers, or have extensive tower leasing arrangements already in place. As the Commission has observed, "in many geographic areas, the most desirable positions for antennas on communications towers are occupied by existing tenants, leaving subsequent tenants with a choice of antenna positions that may not be optimal for their needs."[238] Consequently, "tower siting costs and scarcity of desirable antenna positions may constitute significant entry barriers to new providers."[239]

Small and regional carriers also are more likely to serve rural areas, which means they often lack the economies of scope and scale of carriers serving urban populations. It therefore costs more and takes more time to build out in rural areas. Finally, even if smaller carriers could meet an artificially short build-out deadline, absent USCC's proposed interoperability requirement, their access to a sufficient quantity of devices may be substantially delayed. This

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[236] *See* Congressional Research Service, *Spectrum Policy in the Age of Broadband: Issues for Congress*, CRS Report for Congress, pp. 25-26 (Feb. 3, 2010) ("Performance requirements for spectrum license-holders … are some of the policy decisions that can add to the cost of entry.").

[237] *Fifteenth Competition Report*, 26 FCC Rcd at 9844.

[238] *Id.* at 9845.

[239] *Id.*

would prevent these carriers from attracting customers, making it extremely uneconomical to quickly build out networks simply to satisfy an arbitrary performance requirement.

These inherent disadvantages create a serious risk that a strict coverage requirement, particularly one that falls during the midst of a license term, would severely prejudice small and regional carriers seeking to bring a valuable competitive service to a market. As a result, such requirements would have the ironic, unintended consequence of further advantaging the already-dominant national carriers by economically and operationally shackling these carriers' efforts to expand their operations in order to become more viable competitors. These small and regional carriers, who otherwise have may have aggressively participated in the auction, would instead be forced to assign lower valuations to the AWS-3 licenses, if not forego bidding altogether, and thereby cede these licenses to the national carriers. Competition would further decrease, and new services and product innovation would be materially diminished. The losers ultimately would be the very public, particularly those living in rural areas, that performance requirements are meant to assist.

C. If the Commission Insists on Establishing Uniform Build-Out Requirements, These Benchmarks Must Not Be Overly Stringent.

If the Commission declines to apply its reasonable "substantial service" standard to the AWS-3 bands, as it appropriately concluded was necessary for the AWS-1 bands, and thereby permit the significant market-based incentives to guide network deployments, it must ensure that any performance requirements it adopts strike an appropriate balance between incentivizing deployment and affording licensees the flexibility necessary to put spectrum to its highest and best use. With this in mind, USCC first urges the Commission to avoid imposing an interim build-out requirement, an approach it has favored in the past, including with respect to the AWS-1 spectrum. In that proceeding, the Commission recognized that mid-term benchmarks often do not serve their intended purpose because, "in many instances, licensees may meet an interim

population coverage requirement by installing a small number of cell sites in an urban market, with few cell sites in rural markets."[240] The Commission therefore declined to adopt an interim build-out requirement, which it found to be consistent with its "desire to provide flexibility to licensees to implement their business plans."[241]

If the Commission nevertheless establishes an interim build-out requirement, it must provide licensees a reasonable amount of time to comply with that requirement.[242] As the Commission previously recognized, in order to "establish a viable operation," licensees "must have sufficient time in which to develop market plans, secure necessary financing, develop and incorporate new technology in their systems, accommodate equipment manufacturers' production schedules, and build a customer base."[243] Providing licensees sufficient time to meet an interim build-out requirement is particularly necessary here because the spectrum will be highly-encumbered at the start of the AWS-3 license terms. As noted, because the AWS-1 spectrum was similarly encumbered, the Commission established a 15-year initial license term. The same reasoning – which also led in part to the Commission declining to adopt an interim benchmark for AWS-1 licensees – at a minimum justifies providing AWS-3 licensees with additional time to meet any interim construction milestone.

Specifically, USCC urges the Commission to provide AWS-3 licensees 6 years to comply with any interim milestone. Because the spectrum will be highly-encumbered, the Commission's proposal would not, in fact, provide licensees 4 years to meet an interim benchmark. Rather, USCC believes that ongoing operations by incumbent users of the AWS-3 spectrum could delay

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[240] *AWS-1 R&O*, 18 FCC Rcd at 25192.

[241] *Id.*

[242] *See 37-40 GHz R&O*, 12 FCC Rcd at 18625 ("[L]icensees must be given a reasonable amount of time to meet a performance requirement.").

[243] *Id.*; *see AWS-4 R&O*, 27 FCC Rcd at 16177 ("Extending the interim benchmark to four years will enable service providers and equipment vendors to deploy network infrastructure and devices based on the most advanced technologies, including the LTE-Advanced standard.").

the start of network deployments by at least 2 years, and perhaps far longer. A 6-year interim benchmark would account for these inevitable construction delays, while, in reality, only providing AWS-3 licensees with approximately the same amount of time as the Commission proposes. Moreover, assuming the Commission follows its AWS-1 precedent and adopts a 15-year initial license term, a 6-year interim benchmark would extend the Commission's 4-year proposal in proportion with this longer initial license term.

Absent this longer timeframe, the potentially significant time that will be required to either relocate incumbent users in the AWS-3 bands or to coordinate commercial operations with any remaining Federal users would provide an insufficient amount of time for AWS-3 licensees to comply with an interim build-out requirement. Moreover, a shorter timeframe would particularly disadvantage small and regional carriers, as well as new entrants, who may have little or no existing infrastructure in a particular service area, and therefore are more susceptible to delays in tower siting, permitting, and other local approvals that must be secured before they can begin network deployment. Further, absent a robust interoperability requirement, these carriers' access to equipment may be significantly delayed, making it economically unreasonable to build-out networks in the near-term because they would not receive any return on this investment. Notably, in recognition of the disproportionate impact interim benchmarks have on new entrants, the Commission has previously granted licensees additional time, an approach the Commission should follow here as well.[244]

If the Commission establishes a 6-year interim benchmark, USCC would support the Commission's proposal to require that a licensee offer service to 40% of the population in a

[244] *See AWS-4 R&O*, 27 FCC Rcd at 16177 ("Recognizing concerns raised by commenters that the proposal may not afford a new entrant in a new flexible use terrestrial band sufficient time to deploy its network and offer service, we extend the interim build-out requirement timeframe from three to four years."); *700 MHz Second R&O*, 22 FCC Rcd at 15350 ("We are persuaded that a three-year build-out requirement would have a disproportionate impact on new entrants who have no existing networks or customers, as well as small or regional carriers who are looking to enlarge their operating footprint, but who do not already have extensive pre-existing infrastructure in place.").

license area by the end of that 6-year period. If, however, the Commission adopts a shorter interim build-out requirement, USCC believes that the requisite coverage percentage should likewise be reduced. For instance, 30% coverage within 4 years, or 35% coverage within 5 years. By either providing AWS-3 licensees additional time to meet an interim build-out requirement or making the coverage requirement less stringent, the Commission would help to mitigate some of the inherent harms of interim benchmarks, particularly for small and regional carriers, while still sufficiently incentivizing prompt construction. USCC also urges the Commission to exclude the populations within a license area that an AWS-3 licensee cannot serve as a result of incumbent Federal operations in determining compliance with any coverage requirement. Doing so would be consistent with the Commission's exclusion of government lands when determining compliance with geographic construction benchmarks.[245]

With respect to a final build-out requirement, USCC agrees with the Commission that it should apply at the end of the initial license term, but again emphasizes that a 15-year, rather than 10-year, initial term would be far more appropriate for AWS-3 licenses. Assuming the Commission does establish a 15-year initial license term, USCC believes the Commission's proposed 75% coverage requirement would be reasonable. If, however, the Commission does not follow its AWS-1 precedent and instead establishes an initial license term of only 10 years, USCC believes that the coverage requirement also should be reduced. For instance, requiring coverage of two-thirds of the population in each license area within 10 years, which would mirror the final PCS build-out requirement.[246] Either of these approaches – *i.e.*, providing licensees additional time or reducing the coverage requirement – would help to mitigate the

[245] *See 700 MHz Second R&O*, 22 FCC Rcd at 15350 ("[W]e do not require licensees to include government lands as a part of the relevant service area when applying geographic benchmarks for several reasons."); *see id.* (explaining that a licensee could meet the build-out requirement "by providing signal coverage and offering service to the relevant percentages of land in the service area that is not owned or administered by government.").

[246] *See* 47 C.F.R. §24.203(a).

difficulties licensees face when trying to build out networks on highly-encumbered spectrum, which would increase auction participation by reducing the risk that licensees will fail, despite their good faith efforts, to meet the final build-out requirement.

D. If the Commission Prescribes Uniform Build-Out Requirements, the Penalties for Failing to Meet These Benchmarks Must Not Be Unnecessarily Harsh.

USCC also urges the Commission to avoid imposing unnecessary and draconian penalties for a licensee's failure to meet a build-out requirement. In this respect, although USCC believes that an interim benchmark is unnecessary and counterproductive, if the Commission nevertheless establishes one, a failure to meet the interim benchmark should accelerate the final build-out requirement by only one year. Otherwise, small and regional carriers, as well as new entrants, would be disadvantaged to an even greater extent by an interim build-out requirement. This lesser penalty would be particularly appropriate if the Commission declines to establish a 15-year initial AWS-3 license term, which would cause licensees to have only 10 years to meet the final construction benchmark.

USCC strongly opposes the Commission's proposal that a failure to meet the final build-out requirement would result in automatic license termination for the entirety of the license area.[247] Although penalties are needed for build-out requirements to serve their purpose, the proposed penalty would be excessively punitive, and could unnecessarily harm both licensees and the public. Particularly for small and regional carriers, network deployment is a massive financial and logistical undertaking which involves numerous variables – *e.g.*, equipment delays and tower siting issues – that can unexpectedly derail even the most well-intentioned construction plans. A licensee could spend considerable resources constructing a network and providing service to tens of thousands of customers and still fail to meet the final build-out

[247] *See* NPRM, 28 FCC Rcd at 11531.

requirement, which would strand its good faith investments and cause its customers to suddenly lose service. The excessive risk created by such a penalty likely also would depress auction participation and auction revenues because the value of each AWS-3 license would decrease and because potential bidders would find it far more difficult, or at least far more costly, to obtain the necessary financing.[248]

Instead of automatic license termination, USCC believes that a "keep-what-you-use" penalty for a failure to meet the final build-out requirement would be far more equitable for both AWS-3 licensees and their customers. Under that mechanism, "a licensee that fails to meet its final construction benchmark loses authorization for unserved portions of its license area…"[249] A "keep-what-you-use" rule would provide sufficient incentive for AWS-3 licensees to meet their performance requirements, but would not risk leaving consumers without services that they may have been relying on for years. Not only would this approach treat AWS-3 licensees consistently with wireless operators in other commercial mobile bands,[250] it would help to advance the important public policy goal of expanding broadband service to rural areas. For instance, in adopting "keep-what-you-use" for the 700 MHz band, the Commission explained that these "rules provide additional methods for making smaller license areas available, thus promoting access to spectrum and the provision of service, especially in rural areas."[251] Similarly, in previously seeking comment on whether to apply the "keep-what-you-use" rules to

[248] Although the Commission has previously justified this draconian penalty by noting its authority to grant extensions where a failure to comply with construction requirements is due to causes beyond a licensee's control, *see Amendment of Part 27 of the Commission's Rules to Govern the Operation of Wireless Communications Services in the 2.3 GHz Band*, Order on Reconsideration, 27 FCC Rcd 13651, 13705 (2012), this uncertain possibility fails to provide an adequate basis for carriers, or the financial community, to rely upon.

[249] *Incentive Auction NPRM*, 27 FCC Rcd at 12489.

[250] *See, e.g.*, 47 C.F.R. §§22.947, 22.949, 27.14(h)(1)-(2).

[251] *700 MHz Second R&O*, 22 FCC Rcd at 15349; *see id.* ("In this way, our rules are pro-competitive and help ensure service to communities that might otherwise not receive service.").

the 2155-2175 MHz band, the Commission noted that this "approach may make unused spectrum available to other parties interested in gaining access to spectrum…"[252]

IX. CONCLUSION

The proposed AWS-3 bands, by being adjacent to AWS-1 spectrum, likely can be put to use more cost-effectively than most newly-auctioned spectrum. USCC therefore strongly urges the Commission to make the most of this opportunity by maximizing the amount of paired AWS-3 spectrum. Equally important, however, is that the Commission adopt AWS-3 service rules and auction procedures that sufficiently promote the public interest by ensuring that small and regional carriers, as well as new entrants, have fair opportunities to deploy advanced networks using AWS-3 spectrum. By doing so, the Commission would promote much-needed competition in the wireless marketplace, which would lead to increased investment and innovation by all carriers. It would also dramatically increase the odds that all Americans, including those that live in rural and other currently unserved or underserved areas, gain access to the economic, educational, social, civic, and health benefits provided by wireless broadband services.

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[252] *2155-2175 MHz Band NPRM*, 22 FCC Rcd at 17087.